

# Lookout and Trail Adventures in Powell Ranger District, Idaho

by Harold W. Keller

## Part 1

This story is about the special people I met in a special place during the summers of 1957 and 1958. The special place is the Powell Ranger District, which at that time was in the Lolo National Forest, located in north-central Idaho near the Idaho-Montana state line. Travel on U.S. Highway 12 west of Missoula, Montana over Lolo Pass and you will discover the scenic Bitterroot Mountains and Powell Ranger Station Headquarters near the headwaters of the Lochsa River.



Powell Ranger Station Headquarters taken June 1957 when Powell Ranger District was part of the Lolo National Forest. The lush evergreen conifer forest can be seen in the background.

Snowmelt from the surrounding Bitterroot Mountain Range in early spring pours into the Lochsa watershed turning the Lochsa River into churning whitewater. Thus the name Lochsa is derived from the Nez Perce Indian word meaning rough water.



Springtime conditions on the Lochsa River.

In 1968, the United States Congress included the 70-mile stretch of the Lochsa River as part of the National Wild and Scenic Rivers Act that preserved natural free-flowing rivers in their pristine state. The Powell Ranger District, as of 1961, is now part of the Clearwater National Forest with headquarters in Orofino, Idaho. Historically, it has been part of the United States Department of Agriculture Forest Service, Northern Region One which includes Northern Idaho, all of Montana, and part of North Dakota. The special people are the Forest Service men and women who were part of my experiences while working as a lookout fire observer on Diablo Mountain Lookout, as part of a trail and smoke-chasing crew based at Elk Summit Guard Station, and as part of a work crew at our home base the Powell Ranger Station.

My early years were spent in the rural community of Peabody, Kansas on the edge of the Flint Hills in tallgrass prairie country of central Kansas. I enjoyed hunting, fishing, working

in our men's and boy's clothing stores, farming and ranching, raising cattle and swine, and driving our trucks hauling grain, livestock, and silage. Unfortunately my father died of a cancerous brain tumor at the age of 44 (I was 19) and my plans to major in business administration ended. I struggled to find a sense of direction while a student at Kansas Wesleyan University and wondered what I was going to do with the rest of my life. A professor at Kansas Wesleyan University spent a summer on Jay Point Lookout in Powell Ranger District and shared his experience with students. The next year I filled out the civil service forms and applied for a position as a lookout fire observer and as part of a trail crew. Some of the part time seasonal help for lookouts and trail crews were students from colleges and universities.

My arrival in early June at Powell Ranger District was greeted with the after effects of the winter's heavy snow, wind, fallen trees and debris that blocked the roads and hiking trails. The first few days involved learning how to use equipment that was new to me. The higher altitude also resulted in some shortness of breath, lack of energy, tiring quickly, and headaches for several days until I became acclimated to the difference in altitude when compared to near sea level elevation of Kansas. I was fortunate to have foreman Lennie Smith, who shared his knowledge as a woodsman, and taught me how to use the crosscut saw, the Pulaski, how to safely use a double-bitted axe and to keep it sharpened, and explained how to climb trees. In fact I attribute much of my later professional success in life as a university professor to the kindness, patience, and confidence-building that Lennie showed in teaching me the skills in using trail, tree-climbing, and fire-fighting equipment.

I used a crosscut and chain saw, a double bitted axe, and a Pulaski to clear mostly tree debris from the roadways and off-road trails. I wore a silver hard hat for safety reasons and wrote KANSAS in big black letters on the front. Nobody wanted to climb trees to re-splice and re-hang telephone line so Lennie asked me to do it. I did not tell him that I was afraid of heights and sometimes got vertigo but I said, "Okay, I'll give it a try".

The telephone line was often broken and had to be re-spliced and re-hung 20 to 40 feet off the ground. Our climbing gear consisted of a belt that was worn buckled around the waist



Harold W. Keller with tree climbing gear, a double-bit axe, and the majestic Bitterroot Mountains of the Selway-Bitterroot Primitive Area in the background. Note the telephone line and insulator in the above foreground.

and climbing spurs/gaffs strapped and buckled to the inside of the legs and around the instep of heavy boots. *Pinus contorta* (Lodgepole Pine) was the tree usually used for hanging the telephone line. It had a straight trunk with few branches until about 20 feet high and relatively thin bark that spurs could easily penetrate. This type of climbing gear is often used by professional arborists, telephone pole climbers, and loggers. The puncture wounds from climbing spurs often resulted in sticky, resin droplets that exuded from the thin bark and covered the climber's shirt and pants. The telephone line was stiff galvanized number 9 wire that was threaded through slip insulators made of two identical porcelain halves. The insulators were wrapped together with a flexible number 12 tie wire and attached to a large staple on the tree so that the wire and insulator could pull free without breaking the wire. Heavy snow, falling trees, and antlered animals (elk and deer) caused the telephone line to pull free in a tangled mass on the ground, sometimes with breaks that had to be repaired. Breaks in the wire were re-spliced with a sleeve placed over both broken ends and fastened together with a crimping tool. Lennie repeatedly reminded me to keep my legs straight out from the tree and not "hug" the tree while climbing or risk pulling out the spurs.

On one occasion I had climbed a tree to re-hang the telephone line along a trail that was on the edge of a cliff precipice with a drop-off of several hundred feet. I stayed on the trailside so I could see the ground below but it was a tough, scary climb that took a long time. I was tired, my legs turned to putty, and I wanted to rest by hugging the tree. Lennie warned me that I needed to come down as soon as possible before I "burned" the tree. I was able to keep my spurs embedded in the tree bark as I descended and finally was safe on the ground. My arms and legs were shaking for several minutes while I recovered my strength. It was my trail crew adventures in the Powell Ranger District and encouragement by my foreman Lennie Smith that led to my interest in botany, mycology, myxomycology, and tree canopy biodiversity.

#### **Lookout and trail crew training at Nine Mile Ranger Station:**

My first summer I trained at Nine Mile Ranger Station north of Missoula, Montana the week of June 21, 1957 where I learned to run a compass course to locate smoke and to use a fire-finder azimuth to record lightning strikes and fires. One of the practical exercises was to find a fire using a compass reading through heavily forested terrain with smoke in the distance. The fire could not be seen so the use of the compass reading was the only way to find the fire location. I was able to pinpoint the location of the fire and pass the requirement. There was instruction in first aid techniques, use of firefighting equipment, and recording information on a FIREMAN'S REPORT. This training session included all eight Ranger Districts in the Lolo National Forest at that time with the opportunity to meet and share information with lookouts and smoke chasers from different areas.

#### **Elk Summit Guard Station:**

Snow was still on the ground when I arrived in early June. During the first few weeks trail crews worked out of Powell Ranger Station clearing trails nearby. One of the main objectives was to open the gravel road to Elk Summit Guard Station (5756 feet elevation and road completed in 1934) that extends from one mile east of Powell Ranger Station and then about 20 miles south of Highway 12. This road is the main access to Diablo Mountain and Hidden Peak Lookouts and Hoodoo and Big Sand Lakes. The middle of June seemed like

early spring with some snow drifts still several feet deep on the road and trees blown down in different places.

There was enough snow around Elk Summit Guard Station for a snowball fight and cold enough that heavy clothes were required to keep warm. This picture was taken on arrival



Elk Summit Guard Station third week of June. Our trail crew was first to arrive with the windows still boarded up from the winter elements. Note the two-story cabin with a roof dormer. Trail crews operated out of this station to maintain and reconstruct trails, chase smokes and fight fires, and provide logistical support for Diablo Mountain Lookout and Hidden Peak Lookout.

before the fire danger increased to a point when lookouts were manned for the rest of the summer. Comfortable sleeping quarters on the second floor and a kitchen with cooking stove, cleaning sink for dishes, dining table for hearty breakfasts and suppers, and a lounging area for reading or storytelling were on the first floor. A trail crew of six to eight could live and work and enjoy the wilderness surroundings. Critters must have lived in the cabin during the winter months because their droppings were scattered on the floor that required general cleaning the first day. The summer of 1957 I was assigned to Diablo Mountain Lookout, but prior to that, trails in the vicinity of Elk Summit were cleared for pack animals and hikers.

High mountain lakes in the Powell Ranger District offer fantastic trout fishing, solitude, and scenic beauty in wild places seldom seen by people. Hoodoo Lake is a small more shallow lake (6.5 acres and 14.8 feet deep) a short 1/2-mile hike from



Hoodoo Lake in late June. Frequent visitors, overnight campers, and fishermen were seen during July and August.

Elk Summit Guard Station. Here a cow moose with twin calves frequently was seen walking along the shoreline and was given a wide berth to avoid any close encounters. It has easy access at the end of the road and the cutthroat and brook trout were easy to catch either by fly-fishing or with daredevil spoons.

One of my royal coachman flies was threadbare after use. Trout were always hungry even though most were smaller than 12 inches. We could catch breakfast or supper in a short period of time and this makes for delicious fresh fish in the frying pan. It sure beat catfish fishing in Kansas! This lake received some of the earliest stockings of Eastern Brook Trout (a non-native species) that out-competes the native Westslope Cutthroat Trout. Unfortunately many of the high mountain lakes in the northwest were stocked by early settlers that included miners, cattlemen, and a group like the Sierra Club, followed by governmental management (personal communication from Joe Dupont, Clearwater Region Fish Manager, Idaho Department of Fish and Game). This led to fish populations of exotic non-native species like brookies that have established breeding populations, which in some cases are now being controlled or eliminated. Current fish management practices have resulted in stocking high mountain lakes, usually by airplane at three-year intervals, with species that are native to that watershed. Therefore, in the Clearwater and Salmon River drainages only Westslope Cutthroat Trout are stocked.

Another special place was White Sand Lake where the Idaho state record Golden Trout was caught in 1958, weighing in at 5 pounds 2 ounces. This is a relatively large lake (30 acres and 98 feet deep) that spawned stories about big trophy size golden trout, although spooky and difficult to catch. These fish were stocked mostly in the 1940s and 1950s as a non-native fish species that developed into mostly larger sizes with fewer smaller fish, because this was not a self-sustaining population. In other words, the larger fish eventually ate the smaller fish over time. Recent fish surveys suggest that the goldens initially stocked were no longer present and the lake has not been restocked since the early 1960s. Later fish stockings were of cutthroat and rainbows but all stocking stopped in the late 1990s. Recent fish surveys indicated rainbows had low to moderate levels of natural reproduction but cutthroats do not occur there. This is a famous lake embedded in the fishing lore of the Powell Ranger District.

My favorite lake was Big Sand Lake, the second largest lake in the Powell Ranger District (750 acres and 47 feet deep). I hiked in the first week of July with a group and stayed in a cabin at the far end of the lake. The trail had been cleared of blow-down trees and debris so that the 8-mile hike from Elk Summit Guard Station was mostly a level easy grade without switchbacks. All I ever caught using red and white daredevil spoons and flies were native Westslope Cutthroat Trout, mostly between 12 to 14 inches, with sides splashed with bright red.



Scenic Big Sand Lake near the trail entering from the north. Cutthroat trout were larger and more abundant among this pile of dead logs. This view is looking toward the cabin and Big Sand Creek from the far end of the lake.



Picturesque Big Sand Lake as viewed entering from the trail.

There is a naturally reproducing cutthroat population as well as a population of introduced brook trout. The picture taken with fallen logs in the foreground harbored larger cutthroats that were easier to catch. The water was crystal clear and shallow around the margins of the lake so I waded into the lake or fished from the shoreline, but it was always enticing to see if some big lunger was in the deeper parts of the lake. There was a bull moose feeding in the shallows near the cabin that stood his ground whenever I came near. In fact he chased me out of the lake and I had to take refuge in the cabin.

Towering Graves Peak (elevation 8228 feet) is famous because of a lost gold find that survives as a legend. There is also a lookout constructed in 1924 atop the mountain that commands a spectacular panoramic view of Powell Ranger



Grave Peak stands as the tallest mountain in the Powell Ranger District. The rock face is toward the northeast near the meadow at the end of the Kooskooskia Meadows Road at the upper end of Swamp Creek.

District. We planned a day pack trip on horses from Woolley's Muleshoe Pack Camp to photograph the area. This was a long, scary trip because the trail was rocky with sharp drop-offs causing the horses to stumble. My bottom was so sore that when we reached the main road I said that I would walk the last several miles. I asked what I should do with the horse and someone said "just slap it in the rear and it will go home on its own". It did.

Where is the lost gold? Supposedly on a summer day sometime in the 1880's Jerry Johnson packed into the Grave Mountains with a Nez Perce Indian named Isaac who guided the party to a secret place. Unfortunately the Indian was too old and too sick to finish the journey. On his deathbed he pointed to a ridge top where the gold was located, but too weak to go on, died during the night. Ever since prospectors have

used maps and tales of the location to search for the gold treasure but to no avail. The lure of the unknown and possible riches will continue to beckon prospectors to this back country with the hope that blood, sweat, and tears will someday produce a "glory hole". For a more detailed account of this story see Bud Moore's "The Lochsa Story, Land Ethics in the Bitterroot Mountains" pages 79 to 94. But there is "black gold," not in liquid form, instead found as a black mineral or monazite sand in the small stream behind Elk Summit Guard Station. This



Hoodoo Creek flowing through a grassy meadow behind Elk Summit Guard Station. Shallow places in this streambed yielded black mineral sand and garnets. Note telephone line in upper foreground.

was seen as traces of black sand that washed out along small eddies and sand bars in the shallow portions of the stream. It is possible to pan for monazite sand that contains titanium, zirconium, thorium, and small red garnets. On rare occasions, flecks of gold may also be comingled in deposits. The garnets are tiny, spherical, dark red bodies not large enough or of high quality to be worth much.



Split rail fence and a small stream (mostly not visible) directly behind Elk Summit Guard Station. A whitetail deer near salt lick in backyard.

Stories abound about the trail and firefighting crews that work to maintain passable trails, roads, and protect property from fires. Much like the story of the "side hill gouger," creatures adapted to living on hillsides by having legs on one side of their body shorter than the legs on the opposite, enabling them to walk faster on sides of hills. Lennie Smith loved to tell that story. A falling tree that you do not hear is the one that kills you has some truth from first-hand experience. On one occasion we responded to a fire call of about an acre fire that was quickly brought under control by a fire line. Two of us were selected to watch the fire for two days to make sure that every ember and puff of smoke was out and the fire was cold. We had to use our hands to sift through the ashes and watched for smoke

before we could leave the fire site. I had to fill out the firefighter's report. I was warned to look around to make sure no standing or burning trees were nearby but carelessly walked too close to a tree that fell in the opposite direction. I have watched several times as silent tree killers ("widowmakers") have fallen without making any sound until hitting the ground. Fortunately nobody was injured during my stay in the Powell Ranger District. The next article in this series will be my adventures on Diablo Mountain Lookout.

## EPILOGUE

What is the rest of the story? More details about my Kansas home on the range and experiences in Powell Ranger District were chronicled in the Southeastern Biologist, Invited Research Paper, entitled "Tree Canopy Biodiversity in Temperate Forests: Exploring Islands in the Sky" Volume 56, Number 1, January, 2009, pages 52-74, coauthored with my students Sydney E. Everhart, Melissa Skrabal, and Courtney M. Kilgore. Our tree canopy biodiversity research study sites were located in the Great Smoky Mountains National Park in North Carolina and Tennessee and the Daniel Boone National Forest in Kentucky.

Tree climbing experiences in the Powell Ranger District were important conceptually later in life as our research team used the double rope climbing method to collect ferns, fungi, lichens, mosses, liverworts, and myxomycetes (Kilgore et al 2008). This tree canopy research project was financially supported by the National Science Foundation, the National Geographic Society, and Discover Life in America. More details about tree canopy biodiversity can be found on the Discover Life in America web site at [www.dlia.org](http://www.dlia.org) by accessing communications on the menu bar, then publications on the pull down menu, then scroll down to Scientific Papers to open the PDFs of several papers (asterisk indicates students):

Kilgore\*, C.M., H.W. Keller, \*S.E. Everhart, \*A.R. Scarborough, K.L. Snell, \*M.S. Skrabal, C. Pottorff, and J.S. Ely. 2008. Research and student experiences using the doubled rope climbing method. *Journal of the Botanical Research Institute of Texas*. 2(2): 1309-1336.

Keller, H.W., \*M. Skrabal, U.H. Eliasson, and T.W. Gaither. 2004. Tree canopy biodiversity in the Great Smoky Mountains National Park: ecological and developmental observations of a new myxomycete species of *Diachea*. *Mycologia* 96: 537-547.

Keller, H.W., P. Davison, C. Haufler, and \*D.B. Lesmeister. 2003. *Polypodium appalachianum*: an unusual tree canopy epiphytic fern in the Great Smoky Mountains National Park. *American Fern Journal*. 93: 36-41.

Other important tree canopy biodiversity publications related to tree climbing in the Powell Ranger District are available from the author as PDFs:

Keller, H.W. 2005. Undergraduate Research Field Experiences: Tree Canopy Biodiversity in Great Smoky Mountains National Park and Pertle Springs, Warrensburg, Missouri. Council on Undergraduate Research Quarterly. June Volume 25, Number 4: 162-168. (Invited Paper).

Keller, H.W. 2004. Tree canopy biodiversity: student research experiences in Great Smoky Mountains National Park. *Systematics and Geography of Plants* 74: 47-65.

\*Snell, K.L. and H.W. Keller. 2003. Vertical distribution and assemblages of Corticolous Myxomycetes on five tree species in the Great Smoky Mountains National Park. *Mycologia* 95: 565-576.

More recently the Bitterroot Mountains and the Blackfoot River in the Missoula, Montana area were featured in Norman Maclean's book, *A River Runs Through It And Other Stories* that was made into a popular motion picture. The specific story "*USFS 1919: The Ranger, the Cook, and a Hole in the Sky*" was a made for television movie drama that highlights Norman Maclean's summer work experiences at Elk Summit Guard Station, Blodgett Canyon and Grave Peak Lookout while employed by the Forest Service. Stories about the Powell Ranger District will always make this a special place indelibly recorded in books, movies, and the historical records of the United States Forest Service.

**Harold W. Keller**

Botanical Research Institute of Texas, Fort Worth, Texas and Professor Emeritus, University of Central Missouri, Warrensburg, Missouri. [haroldkeller@hotmail.com](mailto:haroldkeller@hotmail.com).

# Lookout and Trail Adventures in Powell Ranger District, Idaho

by Harold W. Keller

## Part 2, concluded from previous issue

The Lewis and Clark expedition passed through the Lochsa country on September 14, 1805, camping near the present-day site of Powell Ranger Station Headquarters and the Lochsa River. Their logbook records the hardship they faced for want of food with these words "compelled to kill a colt...for the want of meat..." and this appears on a sign to mark the spot. They may have been the first white men to explore the northwest but were preceded by the Nez Perce Indians by thousands of years and Asian ancestors over a land bridge perhaps 15000 thousand years earlier. These early people never owned the land but were the first true inhabitants who respected the bounty of the land and lived as part of an ecosystem. Their footprint was light on the land that provided their livelihood with animal and plant life surrounded by natural features, all part of a spiritual heritage.

Beauty is in the eye of the beholder but for many, the Nez Perce, early mountain men and settlers, and myself, the mountain landscapes dominated by the evergreen conifer trees, streams, rivers, and high mountain lakes filled with fish, valleys with meadows and alpine flowers, was a wild paradise unmatched anywhere else. It is important to remember that the Lochsa country, and everything that lives in it, was shaped over millions of years, evolving as part of an ecosystem that includes fire from natural sources such as lightning strikes (see Moore, 1996, pages 1-78, includes black and white pictures of people and places).

This historical perspective sets the stage for the early mountain men, fur trappers, Bud Moore's family, and early settlers in the Lochsa country about the turn of the century, the early 1900s. Exploration of the Lochsa now turned to well-intentioned exploitation by building trails and roads, cutting down timber for commercial use and building more permanent structures such as log cabins and Elk Summit Ranger Station in 1911-1913 and enlarged in 1925, Powell Ranger Station in 1915, along with establishment of the Powell Ranger District. Superimpose on this time period the great forest fires of 1910 that destroy and scorch much of the Lochsa country which usher in Forest Service fire management and suppression strategies emphasizing control measures. In the 1920s mountaintops and ridges became observatories where lookouts were constructed, including Diablo Mountain Lookout in 1926. Once fires were spotted smoke chasers were dispatched quickly to control and extinguish every spark of fire. The Forest Service philosophy concentrated on the elimination of fire in the ecosystem.

During the 1930s and 1940s there were more than 20 lookouts in the Powell Ranger District but this number varied based on a fire management plan that considered fire danger, value of the resource, fire occurrences, man caused fires, and any change in ranger district boundaries (Jack Puckett personal communication). In 1957 fire suppression was still a high priority with the Forest Service according to Jack Puckett in his first year as Head Ranger of Powell Ranger District. A list of lookouts located in Powell Ranger District in 1950 is arranged alphabetically: Bear Mountain Lookout, B. M. Hill Lookout, Beaver Ridge Lookout, Black Lead Lookout, Cooperation Lookout, Diablo Mountain Lookout, Dan Ridge Lookout, Graves Peak Lookout, Hidden Peak Lookout, Hot Springs Lookout, Indian Graves Lookout, Indian Post Office Lookout, Jay Point Lookout, Jerry Johnson Lookout, Maple Lake Lookout, Rocky

Point Lookout, McConnell Mountain Lookout, Round Top Lookout, Savage Ridge Lookout, and Wendover Ridge Lookout. Some of these lookouts were accessible by road such as Rocky Point but others were more remote. Diablo Mountain and Hidden Peak Lookouts were located in the Selway-Bitterroot Primitive Area at the southwestern most edge of Powell Ranger District. Here logistical support was provided by mule pack string from Elk Summit Guard Station to both lookouts. More recently with aerial detection a number of low priority lookouts were unmanned and many abandoned, burned or torn down.

Prior to hiking and packing in to Diablo Mountain Lookout our trail crew cleared trails and hung telephone line in the surrounding area with Elk Summit Guard Station as our headquarters. Lennie Smith, as Elk Summit Guard and foreman for our trail crew, was not only a leader and craftsman in building trails but also a master cook. Hearty breakfasts at Elk Summit were a culinary delight because of Lennie's sourdough pancakes. Fried bacon or ham and eggs over easy, a sourdough starter kept going for more than 50 years that is still active today (now more than 100 years), a batter mix cooked on a hot grill produced a delicious light pancake usually smothered with maple syrup. Those golden brown pancakes were the best I have ever eaten! We ate like kings because of Lennie's hot sourdough bread, apple and cherry pies, and his packer's coffee among other tasty dishes. His crockpot with sour dough starter was off limits to everyone. Lennie was responsible for packing in my belongings, food consisting mostly of canned goods, and supplies that I would need for my stay of about 55 days on Diablo Mountain Lookout beginning the second week of July, 1957 when the fire danger had increased enough to warrant the time and expense of keeping a permanent lookout observer.

My journey to Diablo Mountain Lookout started at the intersection of Forest Road 360 less than a mile north of Elk Summit traveling to the Big Sand-Diablo Mountain Trailhead then veering off eastward. The first few miles were easy mostly level grade that eventually went across a lush, grassy area called Horse Heaven Meadows with beautiful alpine flowers but as the trail neared the Diablo Mountain ridgeline it was a steep climb with numerous switchbacks. About a mile from the Diablo Mountain summit the trail crossed Diablo Spring, which was my source of water hauled in a five-gallon container on a backpack. We had hung telephone line along the way but at Horse Heaven Meadow a huge pine tree afforded a hang of 50 to 60 feet on one side and in the middle of the meadow



Side view of Diablo Mountain Lookout as seen in 1957.

the telephone line was kept above the ground with a man-made cross arm stuck in the ground then hung again on the other side. The name Diablo means Devil in Spanish but I am not sure how Diablo Mountain got its name but the last part of the hike was a devil of a trail. However, if anyone wants to see the most beautiful place on earth that I have ever seen, this hike (4.9 miles) is worth the time and effort to get there.

Diablo Mountain Lookout was first built as a cabin in 1926, replaced with an L-4 ground cabin in 1930 as a standard 14 x 14 foot frame pre-cut house known as an "Aladdin." It had a peaked and gabled roof with wooden panels mounted horizontally over the windows in the summer to provide shade and lowered over the windows in winter. This lookout was a cabin built directly on the edge of a cliff with a several hundred foot drop-off. The direction of the picture (previous page) was taken facing eastward toward Blodgett Pass along the ridgeline that shows the name D I A B L O emblazoned in orange letters on the roof. Pilots of the Tri-motor Ford aircraft from Johnson Flying Service based at Missoula, Montana could more easily spot and identify the lookout flying over the ridge. One ground wire on the right and another on the left runs from the lookout at an angle to the rocks below and along with the lightning rod above protected the lookout from lightning strikes. Everything inside the lookout (cooking stove, firefinder azimuth, and bed) were connected to ground wires outside the cabin. Some lookouts had radios but the telephone connection can be seen running from the post to the cabin on the right.



Front view of Diablo Lookout with Lennie Smith in foreground.

Lennie Smith packed in food and water about every two weeks riding a lead horse and trailing a single pack mule. This color image was taken in front of the lookout after unloading the food and water. There was no refrigerator or ice only a box with a wire mesh screen on the outside of the lookout where perishable items temporarily could be stored. I liked fresh milk and steak so as a special favor Lennie would pack a quart of milk and a choice cut of steak from Elk Summit. I cooked the steak in a wood fired stove and any fresh vegetables so we could have a feast before the return trip.

Mounted on the front of the lookout was signage that had the forest service logo, DIABLO MTN. LOOKOUT, ELEV. 7500, LOLO NATIONAL FOREST, although maps and books list the elevation as 7461 feet. This promontory commanded a panoramic view in all directions. Westward the view is Maple Point, Maple Lake, Friday Ridge, and Graves Peak more northwesterly, northeasterly Big Sand Lake and due east Blodgett Pass and the Bitterroot Divide, southward to Goat Heaven Peaks and Goat Lakes across East Moose extending deep into the Selway-Bitterroot Primitive Area, and north toward Beaver Ridge, Savage Ridge, Hidden Ridge and more

northeasterly lies Hidden Peak. These are some of the landmarks a visitor can see along with grassy meadows below



Northwesterly view of grassy meadow and stands of timber directly below Diablo Mountain Lookout.

the lookout where elk herds would congregate in the late evening hours. Visitors and trail crew members would sometimes hike from Elk Summit to Diablo Mountain Lookout on weekends to see the spectacular scenery and spend time with me. This group rode horses tied here to the hitching post in front of the lookout.



Front view of Diablo Mountain Lookout with me on front porch steps and visitors with trail horses.

Snowcapped mountain peaks and tree-covered terrain in every direction were part of spectacular scenic views from



Scenic view of Selway-Bitterroot Wilderness Area.



Diablo Mountain Lookout southerly view of Goat Heaven Peaks in Selway Bitterroot Wilderness Area.

Diablo Mountain Lookout. Location of a lookout in this part of the Powell Ranger District was important to protect valuable tree timber species especially in the Selway-Bitterroot Primitive Area established in 1936 and later designated the Selway-Bitterroot Wilderness in 1964. This area now comprises a total of 1,340,587 acres with approximately 1,089,144 acres in Idaho and 251,443 acres in Montana. Tree species observed from Diablo Mountain Lookout were White Bark Pine (*Pinus albicaulis*), Alpine Fir (*Abies lasiocarpa*), Alpine Larch (*Larix lyallii*), Grand Fir (*Abies grandis*), Western Larch or Tamarack (*Larix occidentalis*), mostly Lodgepole Pine (*Pinus contorta*), Douglas Fir (*Pseudotsuga menziesii*), and Western Red Cedar (*Thuja plicata*).

Another conifer species Western White Pine (*Pinus monticola*), the state tree of Idaho, formed an extensive ecosystem confined to more moist sites of northern Idaho and northwestern Montana in the Kaniksu, Coeur d'Alene, St. Joe and Clearwater National Forests, and the western part of the Kootenai National Forest in Montana. The Powell Ranger District had limited mixed stands of Western White Pine confined to the lower elevation drainages like Wendover Creek, Badger Creek, and the north facing slopes on the south side of the Lochsa River. This tree species was a commercially valuable lumber tree with many preferred uses for softwood home interiors or furniture. Unfortunately a devastating fungal disease, White Pine Blister Rust (*Cronartium ribicola*) has almost wiped out this tree species. Similarly, Engelmann spruce (*Picea engelmannii*) existed as extensive stands of giant trees in the vicinity of Powell Ranger Station but were part of a huge blow down in 1949, creating dead trees ideal for attack by the Spruce Bark Beetle (*Dendroctonus engelmannii*) and also Spruce Bud Worm – an adult moth insect (*Choristoneura occidentalis*). In 1957 and earlier, crews were operating from Powell Ranger Station cruising timber and marking trees attacked by these plant pathogens. More details about the history of the Mountain Pine Beetle, Spruce Bark Beetle, Spruce Bud Worm and the efforts of the Forest Service to contain the epidemic can be found in Moore's book in pages 305 to 368.

What happened to the forest ecosystem when the White Pine Blister Rust fungus attacked and killed most of the Western White Pine in northern Idaho and northwestern Montana? The Forest Service was cruising timber with crews that marked infected trees for removal or chemical spraying. All five-needled pines are attacked by this fungus. Even though this forest ecosystem had evolved over thousands of years most of the Western White Pine trees were gone or seriously depleted in less than 75 years in national forests of the Kaniksu, Coeur d'Alene, St. Joe, Clearwater, and the western part of the Kootenai in Montana. This fungal rust has an alternate host the current or gooseberry shrub (*Ribes* species) that serves as a reservoir. The Forest Service tried for a brief period to remove this alternate host but that did not remove the fungal threat. What was the source of the problem that the Forest Service faced? Pogo possum in the comic strip Pogo got it right when he said, "We have met the enemy and he is us." Humans imported infected nursery stock usually from Europe or sometimes from Asia that introduced a new highly virulent pathogen into a forest ecosystem where there were no former resistant trees. What forest tree species will be next? The Forest Service continues to monitor and protect our forested ecosystems and lookouts were part of that effort.

Lookouts were responsible for around the clock observation of smoke and for learning to read the topographic map of the area on the Alidade or also called an Osborne Fire

Finder. This instrument was mounted in the center of the lookout floor in a standing position with a circular 360-degree detailed map of the area with contours, drainages, and landmarks. The lookout observer could line up two sighting apertures on opposite sides of the ring and move the line of sight on smoke or fires to get a directional reading in degrees. This reading was reported to Dave Parsell the dispatcher at Powell Ranger Station. Another lookout, Hidden Peak in my case, would also report a degree reading and where these two readings intersected was the location of the fire. In addition lookouts were expected to learn how to make a rough estimate of the fire location by scanning any terrain features, drainages, and landmarks from the point of origin to the spot of the fire.

Sometime early during my lookout stay Powell District Ranger Jack Puckett made a visit to evaluate my living conditions, record keeping, knowledge of map reading, and



Diablo Lookout inspection visit of District Ranger Jack Puckett.

ability to pinpoint the location of fires. This picture of Jack was taken from the front steps of the lookout looking southward toward Goat Heaven Peaks. He also checked our weather records of storms and lightning strikes. Storms that would blow in during the day or night sometimes were the source of lightning strikes that had to be plotted and recorded as part of a weather report. The date, time, lookout reading, location, creek or ridge had to be logged on a special form and reported to the dispatcher.

Stormy weather often filled the skies with lightning strikes and was the most common cause that sparked fires observed from Diablo Mountain Lookout. Greater potential fire danger was coupled with extremely dry conditions and lack of rain in some storms. One particular fire that occurred in the Goat Heaven Peaks area will serve as an example of fire detection and suppression using smokejumpers. Lightning activity began in the early morning hours concentrated in a fairly small area so my binoculars were focused on looking for and recording



Southeasterly view of fire near Goat Heaven Peaks. Note black arrow that points to the plume of smoke.

lightning strikes as possible sources of fires in the coming days. One lightning bolt hit a tree that literally exploded into a ball of fire creating a flash point that started a fire immediately upon impact. I could see the flames and eventually smoke carried up slope by the winds. I called in the azimuth reading and the exact location since I had a clear unobstructed view of the area. I took pictures of the fire with my Argus C4 camera but unfortunately I did not have a telephoto lens so the smoke appears far away. I was told that the smokejumpers had been dispatched from Johnson Flying Service in Missoula, Montana. Unfortunately there was some delay so the original fire had grown to a four-man fire. The Johnson Ford Tri-motor plane with three propellers (one on the nose and one on each wing) slowly flew over the area and four smokejumpers exited the plane with distinctively colored parachutes of orange alternating with white panels. Two white parachutes floated down with fire-fighting equipment. It took only a few hours and the smoke was gone. The smokejumpers hiked out to Elk Summit Guard Station and in a telephone conversation said the fire was easily controlled and even though this was rough terrain there were no injuries.

Other lookouts in Powell Ranger District also were part of fire suppression in 1958, for example, Hidden Peak Lookout manned by David Haning who was also from Kansas Wesleyan University. This lookout was constructed as an L-4 ground cab and located on the edge of a cliff at an elevation of 7826



Hidden Peak privy. Note the sign that reads: "This privy built by David Haning of Fort Collins, Colo 1958 is dedicated to Mr. Lennie Smith in recognition of his time spent here". David Haning with firefighters backpack with tools.



Bear Mountain Lookout. Example of tower lookout.



Hidden Peak Lookout with me on catwalk summer of 1958.



Lookout David Haning on front porch of Hidden Peak Lookout summer of 1958.

feet. He also constructed a privy dedicated to Lennie Smith. Note the backpack with standard firefighting equipment of a shovel, a Pulaski, Six C-Rations, wrapped in a canvas that was used for sleeping and strapped to an old Clack frame. Bear Mountain Lookout was the tallest tower at 53 feet with an

L-4 at the top (elevation 7184 feet). These lookouts were part of a Forest Service era that aggressively monitored and suppressed fires in the Powell Ranger District. This changed over time with more understanding of ecosystem ecology so that Wilderness Fire Management policies in the 1970s and later allowed fires to burn, for example, the Bridge Fire in 2007 burned 80 thousand acres in the middle of Diablo Mountain Lookout's viewing area to the north. Views now are more of a patchwork and mosaic of green areas slowly regenerating over time interspersed with tree-covered areas.

A typical day on lookout involved preparing meals using a cooking stove with wood as the source of fire. Meals were prepared using the "The Lookout Cookbook Region 1", 1954, 71 pages (now available as a PDF document). These recipes were simple but produced tasty dishes as long as calories were ignored. Cooking times and recipes were set for sea level. I tried my hand at making sourdough bread and sourdough pancakes with starter that Lennie Smith had given me. His instructions were followed and my first loaf of bread was a beautiful golden brown color on top. Unfortunately I had forgotten that at higher altitudes there is reduced air pressure meaning that it takes longer to cook and bake foods since the lower temperature slows down the chemical and physical reactions that occur. As a rule of thumb one minute of cooking time is added for every 500 feet elevation you are above sea level. In other words it will take longer to bake bread completely especially in the center. You guessed it! My bread tasted fantastic in the outer portions but was still doughy and not

thoroughly cooked in the center. I learned my lesson the hard way and adjusted my cooking times accordingly for different foods.

Observations of animal life along trails and around Diablo Mountain Lookout were a new and different experience for someone from the plains of Kansas. Daily life on a lookout can be lonely except for the animal life nearby that enlivens the daytime routine of watching for fires. I had heard stories that it was possible to catch a "fool hen" with your bare hands but I had assumed this was just another tall tale for a gullible Kansan. Of course the myths and stories the guys on the trail crew told me were considered fairy tales but much to my surprise I found a bird on a rock in front of my lookout about the size of a pheasant (I had hunted pheasants in Kansas). I slowly got closer and closer to the bird, as it froze motionless. It just sat there until I lunged at it catching it with my bare hands. I carried it back to the lookout for supper. However, I did not have the heart to kill the bird so I released it and it flew away. What was this bird? Now this is a true story! This bird is a member of the grouse family and more specifically is known as the Franklin's Grouse or Spruce Grouse (*Falci pennis canadensis*) in Idaho. It is usually associated with conifer-dominated forest areas even though the lookout was above the timberline. This photographic image is of a female hen without the more colorful scarlet eye patch found in males typical of a dimorphic bird species. This was a one-time encounter even though old-timers in Idaho told me that this bird might keep someone alive lost in the woods because of tameness it can be caught with bare hands.



Close up image of "fool hen" taken just before I caught it with my bare hands.

Playful chipmunks (*Tamias minimus*) lived in a nearby woodpile and in rocks around the lookout. Pieces of bread would lure these little rodents inside the lookout or more often they could be seen running along the windowsills. Their common presence broke the silence with a trill or chip-trill often preceded by a loud chip, especially when agitated. Sudden movements darting here and there often preceded by a high-pitched squeak of their alarm call were part of their comical antics.

My favorite animal was the Pika (*Ochotona princeps*) also known as "rock rabbits" that lived in the crevices of a rocky ledge directly below the lookout. This small mammal has short limbs, rounded ears, a short tail usually not visible, and an oval body about the size of a human fist. They look like a furry ball about 6 to 8 inches long. These animals occur in the mountainous regions of New Mexico northward to Idaho and Montana. Pikas often live on talus slopes among the loose

rocky debris but this colony at Diablo Mountain Lookout survived as residents on a solid rocky outcrop above the tree line. Their calls were a series of short intermittent squeaks described as a high pitched "eenk!", "eEEP", or "ehh-ehh" used to communicate with each other and their hoary marmot neighbors. I never saw any predatory birds in flight above the lookout so it was not possible to determine the specific nature of the calls. If I got too close they would quickly scurry into a hole or crevice. Pikas are considered indicator species or sentinels of global warming since a warming trend apparently has resulted in population shifts to higher altitudes or contributed to the local extinction in certain regions of the Great Basin in Nevada and Utah. Recent attempts to list Pikas on the endangered species list have failed but continued research goes on to monitor future trends of population decline and geographical shifts. It would be interesting to know if the Pika population at the Diablo Mountain location still exists.

Hoary Marmots (*Marmota caligata*) were also present living among the same rocks as the Pikas often sunning themselves for long periods of time. They were often seen on all fours or in an upright position on two hind legs. This animal lives in similar habitats as the Pika and is the largest of the North American ground squirrels (24 to 32 inches in total length, including a tail 6.7 to 9.8 inches) and is related to prairie dogs. The word "hoary" refers to the silvery-grayish fur on the shoulders and on the upper back. Their calls are a high-pitched whistle suggesting the name "Whistle Pigs" that alert other members of the colony that danger is nearby. Other vocal sounds include chirps, growls, and whining sounds. I did not hear them use the alarm call or vocalizations in the numerous sightings on rocks.

One early evening a pair of American Marten (*Martes americana*), a member of the weasel family, wandered to the front doorsteps of Diablo Lookout. I was surprised how close I could get to them (several feet) and I was able to feed them a tin of tuna. I watched them eat and then slowly walk away down the southward slope. Martens are usually associated with forest habitats but in this case they had wandered above the tree line to the lookout. They may have been searching for prey species such as the Pikas on the rocky ledge below the lookout.

Other animals observed from Diablo Mountain Lookout included Mountain Goats (*Oreamnos americanus*) along the rocky cliffs above the tree line looking directly southward. I could see them clearly with field glasses climbing the rocky cliff faces of Goat Heaven Peaks their contrasting white woolly coats standing out against the background. Most evenings were highlighted by herds of elk (*Cervus canadensis*) grazing in meadows below and westward from Diablo Lookout. Porcupines (*Erethizon dorsatum*) were seen along the Diablo Mountain trail on the way to my water haul from a spring about one mile back down the trail. I carried a five-gallon container on a backpack that was my water supply for cooking and taking a shower with a teacup of water. This was a tough hike going back up the switchbacks so I conserved water in every way possible.

Sunrise, sunsets, and low cloudbanks following rain showers were spectacular views from Diablo Mountain Lookout. Early morning hours after a rainstorm the previous day would leave valleys of clouds looking eastward toward Blodgett Pass. Gazing down into these cloud-filled valleys was the closest thing to heaven on earth of my life. Early in September 1957 Diablo Mountain Lookout was closed, boarded up, and I returned to Elk Summit Guard Station. I had shaved at regular

intervals but my hair was much longer and shaggy in need of a haircut. I asked Lennie Smith to give me a haircut using pinky shears because that is all he had. Thick chunks of hair littered the floor but he lowered my ears so they could be seen.

Lookouts and some trail crews throughout the district assembled at Powell Ranger Station for the last time before we went home. I decided to go fishing downstream from Powell on the Lochsa River for trout and whitefish. This cool fall day



Scenic Lochsa River downstream a short distance from Powell Ranger Station. This image was taken in September when the flow of the river has slowed with deep pools that have trout and whitefish.

brings back vivid memories as if it were yesterday. Almost every cast with my fly rod using hellgrammites or salmon eggs resulted in a whitefish strike and catch. I was fortunate to catch rainbows, dolly varden, and whitefish that were running at that time. I cleaned the fish then attached them to wire hangers placed inside sheds made of corrugated metal. They were slowly cooked and smoked overnight using green alders. The next day we celebrated our going home with smoked fish, pretzels, and beer.

### Epilogue

What is the future of the Lochsa country? The former heyday of the lookouts that were part of the Forest Service fire suppression strategy is now probably over since within the current ecosystem management approach, fire is considered a natural event throughout the forested areas of the Powell Ranger District. Fires now burn removing excess fuel and regenerating new stands of trees over many years. Once more than 20 lookouts, now fewer than 5 lookouts remain, and Diablo Mountain Lookout is one of them. Pictures shown here are of a bygone era because Diablo Mountain Lookout was replaced in 1965 with a two story concrete block and frame 15 x 15 foot, R-6 flat roof cabin on a 10-foot base.

Changing times and fire strategies bring us to the present day August 16, 2012, as I write this part of a story that will be repeated time and time again. Fires are burning in the Dolph Creek area spreading to Hoodoo Mountain that has forced the evacuation of the lookout on Diablo Mountain Lookout. The same storm of lightning strikes called the Cedar 7 fire, as part of the Powell SBW East Complex, threatens Elk Summit Guard Station and Hoodoo Campground and has forced evacuation of all volunteers and closure of the road to Elk Summit. Nevertheless, Forest Service fire fighters are poised to save the Elk Summit historical structure in the event the fire blows up and turns the area into an uncontrollable inferno.

Another significant change is the male dominance of key management positions at Powell Headquarters, in the Forest Service, and all-male trail crews that were commonplace during my stay. Also, at that time several married couples staffed lookouts but more women in key management positions will continue to change the face of the Forest Service in the future. Several years ago when I was gathering information for another paper, I called to talk with someone at Powell

Headquarters and at that time Joni Packard was the District Ranger. Many other examples could be cited but Margaret Gorski was the Powell District Ranger in 1994, and Abigail R. Kimbell was the first woman Chief of the Forest Service in 2007. Clearly more women are graduating from forestry schools and that bodes well for future leadership in the Forest Service.

The spirit of the Lochsa country still lives. It must be nurtured, understood, tested, integrated into Forest Service actions and applied to future ecosystem analysis and restoration. A nursery rhyme captures the essence and complexity of natural ecosystems: Humpty Dumpty sat on a wall; Humpty Dumpty had a great fall; All the king's horses and all the king's men; Couldn't put Humpty together again. In other words the whole is greater than the sum of the parts. In most cases ecosystems are extremely complex and we do not understand all of the parts once the whole is destroyed like the pieces of a puzzle that are missing it is hard to put things back together again. The assumption that the wisdom and cleverness of humans will save and protect the land has instead often subdued and exerted dominion over the land and diminished and degraded the land over time. This chapter in the history of the Lochsa country will continue to be written many years into the future.

Tree diseases will continue to plague forest ecosystems in the foreseeable future and that means a reservoir will exist for White Pine Blister Rust, Spruce Bark Beetle, Mountain Pine Beetle, Spruce Bud Worm, and Tussock Moth. The lessons learned from the use of DDT and other toxic chemicals and decisions made about the management of forest ecosystems that lack fundamental basic research on the role of fungi, microorganisms, plants, and animals are discussed in Bud Moore's book, *"The Lochsa Story, Land Ethics in the Bitterroot Mountains"*. This is a must-read book for everyone who believes in preserving the natural wonders of wild places and conservation of conifer forest ecosystems because: Bud lived it, loved it, and with his passionate narrative skill, wrote about it in an engaging and entertaining way.

### Acknowledgments

My thanks go to Bill Moore and Jack Puckett who provided details concerning people, places, lookouts, and trees in the Powell Ranger District. Their knowledge gained over a lifetime of experiences working in this region of Idaho contributed to more accurate narrative descriptions especially after a lapse of more than 50 years in my case. Telephone conversations with Lennie Smith and Dave Parsell helped trigger memories of certain events and activities. Tanna Paulson at Powell Ranger Station was generous in helping me find valuable source information and contacts concerning Forest Service records. Special recognition goes to Joe Dupont, Clearwater Region Fishery Manager, Idaho Department of Fish and Game, who provided me with research data on the fishery in high mountain lakes. Numerous reviewers, including former students, read, edited, and commented on earlier draft versions. I am thankful for the opportunity to have worked in the Powell Ranger District in Idaho that gave me a sense of direction to pursue a professional career as a botanist, mycologist, myxomycologist, and parasitologist teaching courses and doing tree canopy biodiversity research at universities.

### References

- Kresek, R. 1998. Fire Lookouts of the Northwest, Revised Third Edition. Ye Galleon Press, Fairfield, Washington.
- Maclean, N. 1976. A River Runs Through It and Other Stories. University of Chicago Press, Chicago, Illinois.
- Moore, B. 1996. The Lochsa story: land ethics in the Bitterroot Mountains. Mountain Press Publishing Co., Missoula, Montana.
- Post, A. 2011. Pyramid Mountain: my Forest Service days, Part 3. Lookout Network. 22 (4): 14-17.
- Steinberg, S. 2001. Hiking the Selway-Bitterroot Wilderness. A Falcon Guide. Morris Book Publishing, LLC., The Globe Pequot Press, Helena, Montana.

**Harold W. Keller**

Botanical Research Institute of Texas, Fort Worth, Texas and Professor Emeritus, University of Central Missouri, Warrensburg, Missouri.  
[haroldkeller@hotmail.com](mailto:haroldkeller@hotmail.com).

(Appendix I: next page)

## Appendix I

FIREMAN'S REPORT. I have the actual one page FORM 592 R-1, REV. 1950 that we used in 1957-58. It has different sections with required information on the front and back. **HK**

**INSTRUCTIONS TO FIREMAN:** (Fill out before starting to fire), Location within 1/4 mile, Sec., T, R, Date, Year, Hour, Creek, Ridge, or other, Lookout name, Azimuth, Backsight, Size at Discovery, Base of Smoke Seen, Sq. Ft., Acres, Special Landmarks, Rock, Burn, Green Timber, Repro. Ridge Top, Stream, Slope, Exposure and another section, Lookout name, Azimuth, Backsight, Size at Discovery, Base of Smoke Seen, Sq. Ft., Acres, Azimuth Reading from Known Point in Route, Name, Az. Another section called

**GENERAL REPORT:** (Fill Out at Fire), Final Location: Sec., Twp., Range.

**CAUSE OF FIRE:** (Check or Specify), Lightning, Smoker, Lumbering, Incendiary, Debris burning, Miscellaneous. There is a small insert MAP with grid that asks: Show point of origin by X. If Class C draw boundary. If started from or by any vehicle give MEASURED distance from point of origin to center of track or roadway. This fire believed/known to have been started by: Traveler, Fisherman, Miner, National Forest Permittee, Stockman, Rancher, Timberman, Hunter, Forest Service Employee, Other, Local, Outsider, Recreationist, (campers, picnickers, etc.).

**TIME RECORD:** Fire started: Date, Hour, Guess, Known, First discovered by, Date, Hour, From whom did you receive report? When? Hour, When did you start to fire? Date, Hour, You traveled by: Road (Miles & tenths), Trail (Miles & tenths), Cross Country (Miles & tenths), Air (Miles) Other (specify), Search time after reaching vicinity of fire, Arrived at fire with (Number of men), Date, Hour, Reinforcements arrived (Number of men), (Date), (Hour), Fire controlled (Date), (Hour), Fire mopped-up (Date), (Hour), Length of fire line built by: Hand tools (Chains (length of one chain=66 feet), Tankers (Chains), Pumps (Chains), Dozers (Chains), Plows (Chains), Trenchers (Chains), Length of fire line lost, Cause of loss, Fire out (Date), (Hour).

*On the backside:*

**PHYSICAL CONDITIONS:** Wind velocity at time of arrival at fire (M.P.H.), Wind velocity at time of greatest run (M.P.H.), Timber type at point of origin, Description of fuel at fire upon arrival: Heavy, Medium, Light, None, Density of brush and weeds: Heavy, Medium, Light, None, Density of dead wood (under 1 inch): Heavy, Medium, Light, None, Number of snags per acre, Exposure on which fire started, Fire started at base, Middle, Top, of slope. On level, Slope steep, Moderate, Gentle, Level, Ground surface, Cliffs, Slide rock, Rocky soil, Soil.

**BEHAVIOR OF FIRE:** Character of fire on arrival: Smoldering, Creeping, Running, Spotting, Crowding, Size of fire on arrival, square feet, acres. Perimeter in chains, Final size when controlled: square feet, acres, Perimeter when controlled in chains.

**TIMBER TYPE AND AREA BURNED:** Grass, weeds, and brush but no trees (Square feet or acres), Green timber (20 years old or over) in (Square feet or acres), Species, Bug-killed timber, Species, Percent down, Cut-over area, Slash unplied, Piled and burned, Burned broadcast, Old-burn area, Restocked (one or more young trees per 20-foot square), (Yes or no).

**LAW ENFORCEMENT RECORD:** What did you find? What action did you take and results?

**INSTRUCTIONS:** Firemen, smoke chasers, patrolmen, etc., will fill out this form for every fire to which they go, All items must be filled out BEFORE LEAVING FIRE. Date of making out this report: Date, Hour, (Signature). (Look for and preserve evidence on all man-caused fires).

## Hantavirus Protection

It is the time of the year when we start doing our spring cleaning, opening cabins, and working in stations and sheds. Therefore we need to take precautions before and during cleanup of rodent-infested areas to prevent any **Hantavirus**



infections. Before cleaning is attempted, you must trap all rodents and seal up any entryways to ensure that no rodents can reenter. Continue this trapping for a week. Before starting cleanup, ventilate the space by opening the doors and windows for at least 30

minutes to allow fresh air to enter the area. Ensure there is cross-ventilation and leave the area during the airing-out period. When you begin cleaning, **it is important that you do not stir up dust by sweeping or vacuuming up droppings, urine, or nesting materials.** Be sure to wear rubber, latex, or vinyl gloves when cleaning urine and droppings. Spray the urine and droppings with a disinfectant or a mixture of bleach and water and let soak 5 minutes. The recommended concentration of bleach mixture is for cleaning is **1 part bleach to 10 parts water** or **1 to 9 for dead mice and nests.** Use a paper towel to pick up the urine and droppings, and dispose of all the waste in the garbage. After the rodent droppings and urine have been removed, disinfect items that might have been contaminated by rodents or their urine and droppings (keeping your PPE on). Mop floors and clean countertops with disinfectant or bleach solution. Steam clean or shampoo upholstered furniture and carpets that show evidence of rodent exposure. Wash any bedding and clothing with laundry detergent in hot water if exposed to rodent urine or droppings (you may need a professional service). Lastly, remove gloves, and thoroughly wash hands with soap and water (or use a waterless alcohol-based hand rub when soap is not available and hands are not visibly soiled). **Please note that a dust mask may provide some protection against dust, but does not protect against viruses.**

### Dead rodents or nests:

follow the same PPE wear requirements while cleaning up dead rodents or nests. Spray the dead rodent or nest and the surrounding area with a disinfectant or a mixture of bleach and water (**1 to 9 mixtures**) follow the same procedures as mentioned above. Soak rodent, nesting materials or droppings in solution for 5 minutes before wiping up with a paper towel or rag. Place the dead rodent or nesting materials in a plastic bag and seal tightly. Place the full bag in a second plastic bag and seal. Throw the bag into a covered trash can that is emptied regularly. Remove gloves, and thoroughly wash hands with soap and water.



Attics, basements crawl spaces, other storage and areas of heavy rodent infestation can require professional service and with more specialized PPE (appropriate respiratory



protection, coveralls, etc.). When dealing with air ducts heating and cooling ventilation systems, it is best to contact a professional rodent exterminating. Mickey and Minnie might be cute, but their wild relatives need to be treated with abundant caution.