USFS Fire Crew Internship

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COLLEGE OF THE ENVIRONMENT

Internship Title: A Summer with the USFS Methow Valley Handcrew

Student Name: Adriano V. de Oliveira

Internship Dates: June 6, 2022 - September 10, 2022

Rebecca Bunn

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DATE: 11/21/2022
A Summer with the USFS Methow Valley

Wildfire Handcrew

Adriano de Oliveira

Crew Photo with the Alaska Range in the Background. Photo Cred: Miles Goldstein
# Table of Contents

- **Introduction** - 4
- **Duties and Responsibilities** - 5
  - **My Job** - 5
  - **Wildfire Response Tactics** - 7
- **Outcomes** - 10
  - **Wildfire Risk and Forecasting** - 10
  - **Wildfire Prevention Tactics** - 14
  - **The Methow Valley and Wildfire** - 16
- **Assessment** - 17
  - **USFS Wildfire Malaise** - 17
- **Conclusion** - 18
- **Bibliography** - 19
- **Appendix** - 21
  - **Daily Activity Log** - 21
Introduction

Wildfire and ecosystem are deeply intertwined, as wildfire is a selective pressure on ecosystems. It pushes trees to reproduce in fascinating ways and to develop iron clad systems of defense. But ecosystems and fire are changing; what was once balanced and assisted by First Nations stewardship has become erratic and unhinged with Western colonization and resource mismanagement. As such, the US government has been attempting to find a solution, and my second season working wildfire has given me insight into the practices they implement as well as the effectiveness of these strategies. In this internship report, I will touch on the following learning objectives:

- Connect my classroom learning from WWU with hands on practices.

- Observe the impact of fire operations in different fuel models under varying conditions and develop an understanding of how fire severity can change.

- Grow in my understanding of how environmental factors, such as topography, fuel and weather, affect wildfire behavior.

- Gain hands on experience with the federal government and learn how they steward our forests, especially in response to wildfire.

- Gain an appreciation for the effectiveness of prescribed burning.

- Deepen my understanding on the complex relationship between wildfire and local ecological communities.

- Deepen my understanding of the relationship between fire and human communities.
Wildfire has been an integral part of Western ecosystems for millennia. Lightning has and still does start most wildfires here in Washington. This sort of disturbance regime is natural, and important to resetting the biological stagnation of our ecosystems. When disturbances occur in a natural, infrequent matter, it promotes competition and biologic diversity within an ecosystem (Urban In Prep). Creatures and plants have evolved against this selective pressure, but things have changed. During the 20th century, the USFS ramped up its wildfire suppression efforts in response to an increase in activity due to the heavy logging during this era, and new expanding development into wild regions of the West. As such, forests did not burn to nearly the same extent as they had naturally. No low intensity burns were allowed to continue, and even prescribed burning was outlawed; this interfered with Indigenous practice, and many were put in prison as arsonists. The result of this is what is known as fuel loading, as forests grew unchecked in thick, short stands, with plenty of ladder fuels. They became ripe for burning. Fast forward 50-70 years to 2000, and fuels are now beginning to burn uncontrollably, further exaggerated by the changing climate. Our full suppression tactics of the 20th century are no longer viable as fire intensity is beyond what has been natural for time immemorial. As a result, these unhealthy fires burn without end. So, what do we do now?

**Duties and Responsibility**

**My Job**

This summer I worked in the Methow Valley of Northcentral Washington on the US Forest Service (USFS) type-2 IA (Initial Attack) Handcrew. Here our main duty was to carry out operations to lower wildfire intensity and probability, as well as to respond to wildfire initial
attack operations without the assistance of a fire engine (Figure 1). I had the good fortune to work with my seasoned crew boss, Chad Bresnahan, a legend in the wildfire community, with 30 seasons under his belt. He is retiring this season, and it was a good opportunity to gain some wisdom in wildfire tactics from such an experienced source. I also worked under Tim Delph, who planned and ran prevention and response operations from an overhead position. These two men have a great understanding of wildfire, Chad actively in the forest, and Tim with overhead management and planning. They imparted upon me the skills and training required to accomplish our goals with any operation, and to do so safely.

My main job on the crew was working on the lead chainsaw team. Depending upon the assignment, my saw partner and I were tasked with clearing room through the forest so that our crew members could dig line in behind us, while putting any dangerous dead or burning trees safely on the ground (Figure 8). It was a physically, mentally, and emotionally demanding job, with long, strenuous, consecutive workdays in smokey conditions and blistering heat. I cannot lie, I enjoyed every minute of it! We had the opportunity to work on three different fires in remote areas of Alaska (Minto Lakes [Figure 2], Clear [Figure 3,5], and Billy Creek fires [Figure 13]). There were many fires we responded to on our home forest of the Okanogan-Wenatchee

Figure 1. Adriano while performing road preparation underneath the Irving Peak Fire in Plain, WA. Photo Cred: Miles Goldstein
(Mohr, Thorp Lake [Figure 7,8], Pasayten Complex and Irving Peak/White River [Figure 1,4] fires), in subalpine regions near Cle Elum, and valleys in Plain, WA. Being able to hike in and spike-camp near a fire is the strenuous purpose of our type-2 IA crew, but is often unforgettable beautiful (Figure 2).

Wildfire Response Tactics

As a handcrew, we utilize a variety of response tactics. The first, and most utilized, is via indirect attack. This involves either us preparing/improving a preexisting
barrier, such as a road, or monitoring a newly created one, such as dozer line or handline (Figure 1,3,5). In terms of prepping road barriers, this takes place in areas where the fire is headed but hasn’t reached yet. We create buffers of 50-feet on the fire side of the road, removing brush, small trees, and large, dangerous, dead trees. This creates a zone where the fire is less likely to hop across the road and less likely to climb up into the crown, thereby halting the spread of at least a majority of the fire. It is also common to “backburn” the prepared area, which entails lighting it on fire to further reduce its flammability once the main fire arrives (Figure 4). If a road is unavailable, we can dig line using a dozer or our hand tools, such as hoes, pulaskis and chainsaws.

If nighttime or atmospheric conditions dampen fire activity, we practice implementing direct line, also known as “hot line” (Figure 6). This is the same as digging line using hand tools but is more effective as it is directly on a low activity fire front. With many direct attack lines, it is useful to “plumb” the line. This means setting up a water pump at the closest water source
(whether it be river, lake, or tank) and setting up hose lays of up to 2-miles long to send water where it is needed. Digging hot line is one of the more dangerous suppression tactics utilized in wildfire. With all fires, the main objective is keeping the public and firefighters safe. As such, our overarching tactic is to attack the inactive front of the fire directly, flank the sides, and guide the fire in a beneficial direction. This can be either away from structures and into an area where it can be allowed to burn, or where preventative measures have already been put in place and water can be utilized more effectively. Aircraft are heavily utilized in wildfire response. Crews are able to request helicopter water drops (Figure 7). This is an effective tactic, but it can be dangerous if there is miscommunication between pilots and firefighters on the ground.

Another important aspect of wildfire response, and one which I am interested in learning more about, are those known as resource advisors, or READ’s. On larger incidents, READs, who work for the USFS, are requested and function as a check on operational sectors of response. They are a voice for the ecosystem, enforcing rehabilitation of dozer line, advising where line can and or cannot be dug, and providing knowledge on the local flora and fauna and how to
avoid negative impacts where possible. Another important service they provide is influence on whether the fire in a particular area can be allowed to continue to burn, turning the incident into a sort of monitored prescribed burn.

**Outcomes**

**Wildfire Risk and Forecasting**

I was able to partake in a fire weather forecasting module called S290. It is a required course for moving up to the rank of Firefighter type-1. Through this course, I was able to learn more about different topographic, environmental, and atmospheric pressures influencing fire behavior. These are categorized into the simple Fire behavior triangle (Figure 9), with the three sides being fuel, topography, and weather. As each variable increases, the area of the triangle increases, representing greater potential and severity of wildfire.
Topography has a few different effects on wildfire. The first and most intuitive, is aspect. S-SW aspect slopes have the greatest probability of ignition because of the high levels of solar radiation they receive. The fuels on these slopes are drier, the surface temperatures are higher, and the burning is more severe. Northern aspect slopes have much cooler temperatures and generally wetter fuels, so the inverse of S-SW slopes is true. Another factor of topography that effects wildfire behavior is slope steepness. Fire burns upward, so on a steep slope the rate by which the fire spreads (measured in chains, or 66 feet per hour) is greatly increased. A steep slope also increases the downward spread of a fire through the increased likelihood that burning material will roll downhill. A burning trunk falling downhill can spread ignition hundreds of feet, creating a cascading effect. A third effect of topography on wildfire is by funneling heat and wind activity through drainages. Winds flow up these chimneys, pulling the fire upwards at increased rates of spread. Wildfire fighters never want to be above a fire, but especially not in a chimney. One way wildfire is hindered by topography is through topographical barriers. These include features such as old burn scars, rivers, wet riparian zones, and ultra-steep rock faces where fuels cannot grow. Topography is a large factor when planning wildfire response, as leaders need to be warry of where they are putting people and the potential danger they face.

Weather is another indicator of wildfire severity. One factor utilized in both prescribed burning and incident response is an analysis of atmospheric stability. When there is low atmospheric stability, winds become strong and erratic, and fire activity increases. First responders use cloud cover type as a clue to the present atmospheric conditions. Instability is expressed by the existence of cumulus (Figure 10), cumulonimbus, and altocumulus cloud formations. Large wildfires input enormous amounts of heat into the atmosphere, creating their own weather and further destabilizing the atmospheric system. This is expressed through the
pyro-cumulonimbus cloud (Figure 11). High atmospheric stability is expressed through stratus clouds (Figure 12), indicating low fire activity and a window of opportunity for prescribed burns to occur. Unfortunately, high atmospheric stability means that smoke lingers, hence the public pushback that I will discuss in Wildfire Prevention Tactics. Winds are a huge cause of wildfire severity and are difficult to predict. They respond to topographic, atmospheric influences, and the wildfire itself. With wind, it is always important to monitor how it is affecting the fire and to let others know of anything that changes.

Fuel availability is the most important influence on wildfire severity. In a drought, even live flora can have significantly less water, making the area more susceptible to burning. The fuel moisture level is measured through a dry to wet weight comparison of a prominent fuel type in the area. Low fuel moisture is an indicator of the potential for severe wildfire activity. Another influence is fuel continuity, measured by the nearness of fuels to each other, especially larger fuel, like trees. With greater horizontal continuity, fuels have a much higher chance of spreading flames across the horizontal plane. On the vertical plane, ladder fuels, which are middle sized flora, can carry flame from the ground up into the canopy of the forest. When a forest has a high vertical continuity, severe wildfire is likely. If a forest has low vertical and horizontal continuity, then low intensity wildfire is common and establishes a healthy regime for the ecosystem by
creating a negative feedback loop of lowering continuity even further. Alternatively, if forests grow in a continuous fashion, a positive feedback loop is established, and severe, high mortality wildfires persist. In some areas, it is natural for forests to grow in this fashion, such as the Black Spruce in Alaska (Figure 13). In many areas of the West, it is not natural but has become the norm as a response to wildfire suppression and clear-cut logging. As such, fire activity and severity has responded. Reintroduction of prescribed burning and artificial thinning is looking to address this increase in severity through reducing fuel loading.

Figure 13. Severely burned Black Spruce forest on the Billy Creek Fire near Tok, Alaska. This fuel type is adapted to burn and regenerate. Photo Cred: Adriano de Oliveira
Wildfire Prevention Tactics

The return of prescribed burning as a prevention tactic is promising, but it is under threat. From the 1930’s to the 1970’s, the USFS’s wildfire policy was full and absolute fire suppression by 10am the next day after ignition of all wildfires. No prescribed burning was allowed or practiced either. In the 70’s a new policy was enacted allowing wildfires to burn, especially in wilderness areas where no structures were endangered (U.S. Forest Service Fire Suppression - Forest History Society, 2016). With this came the return of prescribed burning, or the purposeful lighting of wildfire during atmospheric events that allow for low, controllable fire activity. This is a long-standing practice in Indigenous cultures here in the West but was outlawed during the 10am stamp period. In recent years, prohibitions on burning have become more stringent, and now specific atmospheric events need to occur for a burn to be approved. This comes as a response to public outcry at the discomfort of wildfire smoke. As such, I personally didn’t have the opportunity to actively participate in any prescribed burns, but my crew was involved in one burn of about 5 acres this spring (Figure 14). There are a few thousand acres we plan to prescribe burn on the docket, and my captain is certain with the current set of guidelines, the crew will never get to burn it.

In a conversation with Tim Delph, who plans when and where to burn, I learned about a few factors that go into this process. The greatest factor when it comes to prescribing burns is...
temporal. Tim generates maps using GIS, spatially describing how long it has been in each area since the last burn. He tries to have every inch of the district burnt at least once every 20-30 years. Another important factor, as an essentially human-centric organization, is proximity to human development and assets. Priority is given to areas surrounding development so that if a high intensity wildfire comes through, it’s severity will be more likely to drop in these already burned areas. The extent to which the Methow burns is large. Tim says that it is almost impossible to keep up with the required burning that the area needs, especially with the politics that are developing in the Valley. He is of the opinion that we need to burn as much as we can to keep the intensity of these fires under control and at a historically natural level, especially after the close calls with the Cub Creek fires of 2021 and the destructive Carlton Creek Complex of 2014. Those who work with fire know that more burning is what we need to fix this problem, as it is proven to work (Hessburg et al., 2022). Outreach is needed to educate the public in fire-prone areas that clean air is not always possible.

Another similar planned prevention tactic is forest thinning. I was able to partake in this, as we can safely implement it during the summer months. Many of North America’s forests are inherently unnatural. They grow in thick stands as a result of old-time, discontinued clearcutting on federal land. As such, the fuel load in these areas is concentrated and close to the ground, so it is easy for the fire to reach the crown and accelerate into a running crown fire. With thinning units, Tim utilizes more time analysis maps, factoring in when areas were last clearcut and prioritizing areas near development since thinning is a time consuming and expensive task. He then ground-truths the area to make sure it is indeed growing unnaturally. Then the crew and other USFS personnel work throughout the season to manually “thin” the area, creating a more natural environment by spacing out trees. We cut all coniferous trees of a certain size and
smaller. In our unit this year, all conifers 8 in DBH and smaller were removed, with the goal of creating 20-feet of space between the drip line of all larger trees. If you have been in an old growth forest, this is how the forest naturally grows, with spacing between large trees and few small trees filling in the gap where a large tree has fallen. When the forest grows this way, it is much more difficult for wildfires to move into the crown because there are less ladder fuels present. The fire burns with low intensity, mostly on the ground. We are artificially trying to reinstate this regime.

**The Methow Valley and Wildfire**

The Methow has evolved with wildfire. The local megaflora have adaptations to deal with wildfire. For example, the Ponderosa Pine, a staple of the region, is adapted for fire, but can only thrive under low and medium intensity fire regimes like those assisted by thinning and prescribed burns. Our former suppression practices of the 20th century have moved the region from low and medium intensity to almost exclusively high intensity. In areas such as interior Alaska, this is the norm. Wildfire has always burned intensely, and Black Spruce have evolved serotinous cones, meaning they release their seeds only when heated by wildfire (Figure 13) (Nix, 2020). This allows the Black Spruce to respond to intense fires with new growth. Unfortunately, the trees in the Methow Valley are not aptly adapted. Ponderosa Pine (Figure 15), Western Tamarack, Subalpine Fir, Douglas Fir

![Giant Ponderosa Pine. Photo Cred: Jessica Lee](Figure 15. Giant Ponderosa Pine. Photo Cred: Jessica Lee)
and Engelmann Spruce, which are some of the common tree species of the Methow Valley, are not serotinous (Little, 1980). This means that while they have adapted wildfire defense mechanisms, such as thick, sappy bark, they haven’t adapted their seeds for high intensity burns (Gabbert, 2017). Artificial thinning and prescribed burning are central to returning this habitat to its historical fire regime to allow it to continue to flourish (Hessburg et al., 2022; McCreary, 2021).

**Assessment**

**USFS Malaise**

To further address these issues and to effectively cover ground, the USFS needs to have well-trained personnel and resources. The wildfire program has a notoriously difficult time keeping their employees, and improvements are needed in the workplace environment, the hours, and the wages to combat this. No permanent employee is allowed to utilize government owned bunk houses for temporary housing, which means employees are left to their own devices to find housing, often for odd periods of time and in expensive areas of the country. As such, if I decide to return to the Methow next season as a permanent seasonal employee, I will be living in my van. My captain’s wife, Aana Kulaas, was interviewed by the Washington post, describing their history of employment through the USFS. Last year, with over twenty years of experience and a bachelor’s degree in natural resource science, she made only 23 thousand dollars. She is involved with planning on the district and therefore doesn’t work overtime, like a field operative. She says in the article, “our financial well-being is directly tied to how severe the fire season is. The busier the season, the more money [Chad] makes… While the overtime keeps us afloat, the downside is all the family time and mental and physical health that must be sacrificed”
(Davidson, 2022). The article continues to describe employment restructuring efforts that are in the works, but it is up to congress to decide their employee’s fate. I believe the duty of the wildfire fighter must continue to move away from entirely first response to also that of a land steward, while still getting compensated for the important and dangerous work.

**Conclusion**

As the climate continues to change and development pushes further and further into our forests, we need to adapt our relationship with wildfire, because it isn’t going anywhere. People must learn to accept that fire is a natural part of life in many ecosystems. If we want to live in a forest that burns, land stewards have to work together to return wildfire to its historic state, before we so heavily altered the ecosystems it burns through.

Working for the USFS fulfilled all the learning objectives I went into the summer with. I have a much better understanding of wildfire and prevention tactics and have gained an intimate understanding of the forests of the Methow Valley. My comfort with wildfire response has been bolstered, and my knowledge of management has been as well. I plan to carry this knowledge forward in my academic career and pursuits, as well as the life lessons learned along the way.
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Appendix:

Daily Log Wildfire Internship Summer 2022

JUNE

Monday, June 06: 0800-1630

We started the day with an arduous physical test to make sure I can perform the duties involved with the job. We then carried into a fire weather and strategy refresher course. We touched on ideas involving aspect, high pressure fronts, “anchoring and flanking”, and emergency deployments. After this we practiced emergency deployments and finished up paperwork for the hiring process.

Tuesday, June 07: 0800-1630

Started the day with our daily briefing, covering a quick safety talk, our local weather projections, and national fire activity. We then did our s-130 which covered our field fire suppression techniques. We then touched briefly on hose lays and firing devices.

Wednesday, June 08: 0800-1630

Brief followed by PT (personal training). Classroom chainsaw use and safety class.

Thursday, June 09: 0800-1630

Brief followed by PT. Preparedness test where we showcased our suppression capabilities. Continued Saw class.

Friday, June 10: 0800-1630

Brief followed by finishing up Saw class. Practiced cold trailing in a former prescribed burn unit to make sure all fire was cold.

Monday, June 13: 0800-1630

Brief followed by installing storage boxes onto our crew trucks. We then had a PT hike in full gear and carrying saws.

Tuesday, June 14: 0800-1630

Brief followed by another full gear PT hike. We finished installing our truck boxes.

Wednesday, June 15: 0800-1630

Brief followed by PT. Completed our Portable water pump classroom portion. We learned about setting up, running and maintaining portable pumps. These are used for pumping water from remote water sources (like a stream) into our objective.

Thursday, June 16: 0800-1630

Brief followed by a Portable pump field portion. Hands on training with pumps and hose lays.
Friday, June 17: 0800-1430

Morning brief followed by field chainsaw training. Spent time watching experienced sawyers fall various kinds of burned and dead trees. Holiday weekend, released 2 hours early!

Monday, June 20:

Holiday, no work

Tuesday, June 21: 0700-1730

Morning brief followed by some more chainsaw training. Returned to the same nuked out burn scar, I got to fall some dead trees myself today and did very well! Also practiced bucking large down trees. End of the day, had a great chat with the region Assistance Fire Management Officer Tim Delph about prevention strategies, such as thinning, prescribed burning and how such operations are planned and carried out.

Wednesday, June 22: 0700-1730

Morning brief. I’ve been chosen to be on the lead saw team along with my experienced saw partner, Will Govus. He’s cut for 8 years and I am excited to be under the mentorship of someone with such experience. We practice digging line, but this time I lead as first saw team, clearing a path for the digs to follow. We also practice a medical extrication from the top of the hill down to the trucks while timing ourselves. Lots of fun, really hard work.

Thursday, June 23: 0700-1730

Morning brief. Today we began work on our thinning unit for the summer. It is a 200 acre plot of land on the west aspect of Loup Mountain. The area has been clear cut in the past, and is now growing thick and unnatural. We are cutting all coniferous trees 8in DBH and smaller in an effort to restore the natural spacing in this kind of forest. We buck all fallen trees and stack them into piles which we will return to burn in the spring. This spacing reduces the unnatural fuel load so that the forest, when it burns, can burn in a more natural, less intense fashion.

Friday, June 24: 0700-1730

Morning brief followed by a training hike in full gear carrying saws up Loup Mountain. This was followed by more work in our thinning unit.

Monday, June 27: 0800-1630

Morning brief followed by PT (personal training) around the base. We then went over our new truck assignments, and went through truck inventory and supply. We restocked all supplies and went over some first aid practice, lead by our Wilderness First Responders.

Tuesday, June 28: 0800-1630

Morning briefing followed by PT. Today we began some computer training called S-290. This course covers various aspects that influence wildfire behavior. Some examples include Topography, aspect, atmospheric conditions, relative humidity, etc. Very long course, took good notes.

Wednesday, June 29: 0800-1630

Brief and Pt followed by more S290.
Thursday, June 30: 0800-1630

Brief and Pt followed by more s290. Today I finished the course.

July

Friday, July 1: 0700-1800

 Morning brief followed by a training hike in full gear carrying saws up Loup Mountain. This was followed by more work in our thinning unit.

Sunday, July 3: 0700-1800

 Morning brief followed by a training hike in full gear carrying saws up Loup Mountain. This was followed by more work in our thinning unit.

Monday, July 4: 0700-1800

 Morning brief followed by a training hike in full gear carrying saws up Loup Mountain. This was followed by more work in our thinning unit.

Tuesday, July 5: 0700-1800

 Morning brief followed by more work in our thinning unit. We found out we are leaving for a 21 day assignment in Alaska on July 10th. As such, we returned to the bay early to prepare for the roll.

Friday, July 8: 0700-1800

 Morning brief followed by a training hike in full gear carrying saws up Loup Mountain. This was followed by more work in our thinning unit.

Saturday, July 9: 0930-1800

 Today we spent the entire day dialing our gear, taking weights for the flight (we had a limit), and preparing for the worst. I am bringing Children of Dune AND God Emperor of Dune, as well as my Audubon Western Trees guide. Also, I have enough bug spray to stop Murder Hornets.

Sunday, July 10: 0600-2200

 Morning Brief. Drove to Redmond Oregon, Hotel rooms for the night.

Monday, July 11: 0600-2200

 Early to airport. Load gear into airplane. Join 3 other crews and fly into Fairbanks, AK. Assigned to Minto Lakes fire, set up camp for the night.

Tuesday, July 12: 0600-2200

 Assigned to division. Stage for the day, completing various small, inconsequential tasks. Working right next to the Alaskan pipeline.
Wednesday, July 13: 0600-2200

Staging once again. Set up spike camp on fireline, next to pipeline. Fire activity has died, so simply here just incase we are needed. Sleep at spike camp.

Thursday, July 14: 0600-2200

Spiked out staging.

Friday, July 15: 0600-2200

Demobilized from Minto Lakes, assigned to Billy Creek fire near Tok, Alaska. Travel to Tok using rentals, set up camp in gravel pit 3 miles south of fire.

Saturday, July 16: 0600-2200

Helicopter safety rundown and sling load building. Helicoptered in, along with gear. Funny enough, demobilized a few hours into arriving and prepping to set up camp. Rebuild sling loads, fly back out and sleep in gravel pit.

Sunday, July 17: 0600-2230

Assigned to Clear fire, near Denali National Park. Travel from Tok to Fairbanks, then south to Anderson, AK. Set up camp in campsite.

Monday, July 18: 0630-2300

Assigned to division. Task force gives us a 6-mile piece of dozer line to hike, mopping up any heat on the green side berm. Task force locates areas of heat using IR scanner. Hike and take care of all heats, hang out for rest of day.

Tuesday, July 19: 0630-2300

Staging @ division gravel pit. Did nothing all day, crew is getting sick.

Wednesday, July 20: 0630-2300

Arial IR scan found a hot spot interior black. We hike in and mop up, open flames and tree falling. Task force found a long berm smoking along road. Dig out lots of berm, dry mopping and use bladder bags to cool the hot spots.

Thursday, July 21: 0630-2300

Working along same berm again. Finish taking care of all heats.

Friday, July 22: 0630-2300

Hike dozer line again, patrolling for any last hot spots that may have survived.

Saturday, July 23: 0630-2300

Staging at supply for the day, helping stack back haul supplies and roll hose. Demobilized from fire and reassigned to Billy Creek AGAIN.

Sunday, July 24: 0630-0000
Drive to Tok, AK, immediately flown into Billy Creek fire. Begin setting up camp, but interrupted by urgent call for response to spotting over the line. Cut saw line late into the night, have everything under control by midnight.

Monday, July 25: 0700-2330
Mop up immediate area near line. Winds were extremely high today and lots of dead black spruce trees falling. Root systems shallow and completely burnt out. Became dangerous for a while so we paused work.

Tuesday, July 26: 0700-2330
Mop up deeper into the black, targeting smokes up to 50 feet interior. Use hose lay that we set up and tools. Cut access holes through the fallen trees using saw.

Wednesday, July 27: 0700-2330
Final mop up, targeting any smokes 100 feet interior.

Thursday, July 28: 0700-2330
Demobilize, fly out of Billy Creek. Return to Tok, AK and sleep behind the Ranger station.

Friday, July 29: 0700-2330
Travel day driving to stay the night at the University of Fairbanks.

Saturday, July 30: 0630-2200
Fly out of Fairbanks, land in Redmond, OR. Spend night in hotel.

Sunday, July 31: 0600-1400
Drive from Redmond back to Winthrop. Early end to day.

August

August 1-4
R and R. Required days off.

Friday, August 5: 0800-1800
Back at it! Morning brief and bay day. Refurb trucks, Saws, supplies. Re inventory everything to make sure we have all that we need.

Saturday, August 6: 0800-1800
Morning brief followed by thinning project work. Receive IA call to fire just after lunch, burning shed up the Twisp River drainage. Structure firefighters take care of it before we are required.

Sunday, August 7: 0800-1800
Morning brief. Visit North Cascades Smokejumper Base. Head to thinning project, PT in afternoon after returning to the base.

Monday, August 8: 0800-1800

Morning brief, PT and thinning project work.

Tuesday, August 9: 0800-0000

Morning brief. Work with other departments of the district in a campground clean-up work party. Called to respond to the Mohr Fire near Palisades, WA. Work on road protection with an engine module. Worked until 230 am.

Wednesday, August 10: 0000-0230, 0645-2000

Stage in area. Assigned to deal with spots along the SE canyon. On large one next to creek consumes most of day.

Thursday, August 11: 0600-2200

Demobilized and assigned to Thorp Lake Fire. Travel to Cle Elum, camp in forest at “trail head”.

Friday, August 12: 0600-2200

Set up sling loads for helicopter. Hike up 3 miles to Thorp Lake. Receive supplies from helicopter drops, then hike up trail and rock scree to reach fire line. Fire is actively burning, we are split into 2 squads, mine heading up further to address a large spot off the main fire, while the other addresses a smaller, more immediate spot there. Spend the day cutting line around the two spots near our squad. Govus drops three actively burning, large sub alpine spruce on top of a cliff face. I learned a lot watching how he brought the trees down in such a way so that nothing burning rolled down the hill into the green areas below. I also drop an easier, also burning tree on top of the cliff face. A great, fun days work with incredible views of the mountains and alpine lake. Hike down at end of day to set up camp by lake. Watch an osprey do some fishing after dinner.

Saturday, August 13: 0630-2200

Return to our spot up on the ridge line. Mop and grid both the black and green. About 100 feet from our spot, we find another, small spot smoldering and quickly take care of it. Return to camp for a dip in the lake before bed.

Sunday, August 14: 0630-2230

Hike back up the mountain. Today we grid and mop the main fire. Lots of lounging around today.

Monday, August 15: 0630-2200

One final grid. Scramble up from fire location to Thorp Mountain lookout. Absolutely gorgeous.

Tuesday, August 16: 0630-2300

Demobilized. Pack up camp, hike out. Drive to Plain, WA, assigned to the Irving Peak fire. Set up in fire camp.

Wednesday, August 17: 0600-2230
Mission for this fire is to work on road prep along a 14 mile stretch of road under the fire. Road prep is essentially a 50 foot wide thinning swath along the road, cutting all vegetation under 4in DBH, and limbing any larger trees as high as feasible. All this material is then piled up to be chipped up later. After road prep is completed, the road is then burned off. Lots and lots of cutting. Fell a 24in dbh snag, the largest tree I have cut so far. Went perfectly.

Thursday, August 18: 0600-2230

More Road Prep.

Friday, August 19: 0600-2230

More Road Prep. Rolled the shit out of my ankle.

Saturday, August 20: 0600-2230

More Road Prep. Took it slow today, ankle felt much better by the end of the day.

Sunday, August 21: 0600-2230

More Road Prep. Back to work. Cutting hard and fast.

Monday, August 22: 0600-2230

More Road Prep.

Tuesday, August 23: 0600-1400

Demobilized, travel day back to base in Winthrop. Refurb tools, saws and trucks.

August 24-26

R and R!

Saturday, August 27: 0800-1800

Bay day. Resume and cover letter work.

Sunday, August 28: 0800-1800

Morning brief and PT. Patrol the rest of the day.

Monday, August 29: 0800-1800

Morning brief and PT. Back to thinning project. Return to Bay and do some work on internship report with my free time.

Tuesday, August 30: 0800-1800

Morning brief and PT. Work on debarking logs and replacing old and broken ones in our fence.

Wednesday, August 31: 0800-1800

Optional workday, I chose to work. More internship report work. Received call detailing structure protection assignment deep in the Pasayten. Collect required supplies and get ready for flight in.
September

Thursday, September 1: 0700-2230

Fly in with short module (only those that chose to work our weekend). We fly into the Monument 83 lookout tower on the Canadian border. Our assignment is to structure wrap an old cabin, Pasayten Pete’s gravestone, and the bottom 12-15 feet of the look out tower. We wrap the grave and cabin, as well as starting the first layer of the lookout. We can see from the look out the Parks Fire ripping across the valley towards us. Beautiful sunset, and the stars this night were incredible.

Friday, September 2: 0600-2000

Finish prepping the lookout and fly back out in early afternoon. Great view of the fire’s column standing up from the helicopter. Refurb supplies when return to base. We are extended two hours to work until 8 pm, so we all drive to the grocery store for cook out supplies and spend our last 2 hours of shift grilling!

Saturday, September 3: 0800-1800

Morning brief. Prep second squad to go on similar trip as ours, but into the Pasayten airstrip. Then end up not going because visibility as cause of smoke is low. Spend rest of day playing cards at the base.

Sunday, September 4: 0800-1800

Morning brief and pt. Thinning project work at Loup Mountain all day.

Monday, September 5: 0800-1800

Morning brief and PT. Back to peeling logs for a while. We take a patrol trip up to the Sweetgrass repeater. Great view of the Pasayten and fires in the distance. Double time.

Tuesday, September 6: 0800-1800

Morning brief and PT. Spend all day working through the S131 training module. Course is about being a squad leader and Incident commander level 5. Goes over good leadership, communications, fire engagement tactics, fire weather, and fire engagement practice scenarios using a large sandbox.

Wednesday, September 7

Decide to take the day off.

Thursday, September 8: 0800-1600

OT day. Morning brief and PT followed by resume work, some HR document requests and an afternoon patrol.

Friday, September 9: 0930-1800

Second to last day! Morning brief and PT. Signed up for a bunch of pro deals that I am entitled to through working as a wildland firefighter. Met with Crew Boss, Boss Assistant, and a few of the squad bosses on the crew and received my end of season performance review. Received nothing but high remarks and advice for my future.
Saturday, September 10: 0700-1800

Woke up early to a fire call. Responded to IA just west of Loup Mountain. Hay bale stack was on fire, we responded along with a few county and forest service engines. While they sprayed everything down, we circled the part of the fire which had escaped into the grass, myself cutting out line with a chainsaw while the rest of the crew followed digging line. Great, quick IA to top off the season. Rest of day was spent hanging out in the bay, playing cards and chatting with everyone. I turned in all of my issued gear at the end of the day.