Big Jack Project

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EXECUTIVE SUMMARY

The Truckee Ranger District lies within the Tahoe National Forest. Within the 850,000 acres of public land of the Tahoe lie 350,000 acres of private land infused in a “checker board ownership pattern” (“Tahoe”). Thus, land management is a very important aspect of the work the forest service does in this area, with different projects requiring different considerations.

The objective of the Big Jack Project is forest ecosystem restoration project. It has multiple objectives including improving: watershed, wildlife, recreation, forest health, and fire resiliency. In addition, the exposure to the various crews will serve as an excellent way in which to learn about the processes required to complete a land management project.

As part of this internship I actively participated in the completion of the project by assisting on different crews involved.
PROJECT OBJECTIVES

The Truckee Ranger District lies in the Tahoe National Forest, which is located in the northern Sierra Nevada. The original objective of the project was to focus on the land management for the Big Jack Project. However, due to the current drought situation and the high profile status of the Onion Creek area, the focus was shifted early on in the year to the fuels treatment there. After completion of the Onion Creek Project, efforts will again be shifted to complete the Big Jack Project within the next couple of years. These efforts include collaboration from different sections of the Truckee Ranger District who will then each go in and use their expertise to assess any environmental factors that must be taken into consideration before a treatment plan can be implemented in the area.

In the future I hope to pursue a career as an Environmental Coordinator for the USDA Forest Service. This summer proved to be an excellent opportunity to see and understand what considerations go into managing Sierra Nevada forests as well as to experience the collaboration process within the agency. I went in with the goal to work with as many different departments as possible. In the end, due to time constraints, my core goal became to target the three crews most heavily involved in the two projects and learn as much as possible about what procedures they follow when assessing land.
PROJECT APPROACH

Spending many days with the various groups allowed for me to build a strong understanding in what the purpose of each group was and also gave me priceless experience performing some of their tasks. My advisor first introduced me to each crew and set up a day for me to join them in the field. Afterwards I was given the liberty to pick and choose which crews I would join according to their day’s agenda. This allowed me to focus on activities that interested me and also to experience a little bit of everything these crews do.

I participated in aspen stand surveys, yellow legged frog surveys, goshawk and owl surveys, weed eradication, and timber management. Depending on the crew and what we were tasked with that day, we would leave the station at around 8:00am every day and return around 5:00pm. To prepare for the task at hand every day, I was given a briefing on procedures beforehand, and safety precautions, as well as reading to help me understand the process better overall. I would make sure to ask plenty of questions to further my understanding and to ensure that my work was acceptable. Often times I volunteered to use the technology that aided in collecting data, including but not limited to Trimbles, GPS systems, and data recorders.

Naturally occurring wildfires are responsible for the abundance of aspen in the west, as well as for general forest health. However, to protect property and life, fires are put out as quickly as possible; as a result this fire induced successional species is being replaced by conifers, grass, forbs or shrubs (“Aspen”). When doing aspen stand surveys, we went out into the forest and find aspen stands. Then, we would use the Trimble to map out polygons on the area for future use. Finally, we would assess the level of conifer encroachment on the stand.

The yellow legged frog recently became listed on the endangered species list, this adds on to the pressure to find and protect their habitat. Non-native fish introduced into naturally
fishless waters have preyed on these frogs and greatly reduced their population. For these surveys, our main course of action was to go out and find possible frog habitat. We would map out the area, and walk around it trying to find any signs indicating that frogs may inhabit the area. In some cases, water temperature and depth was recorded.

Currently, 71 national forests are required to evaluate potential effects of proposed management actions on Goshawks. This is because these powerful raptors have not only been designated as a sensitive species in six of the eight regions within the Forest Service’s range; they are also a management indicator species in 53 national forests (Woodbridge). To find goshawks, we relied heavily on the notion that goshawks are territorial birds (Woodbridge). To look for the birds we would hike into areas that provided good habitat, especially old growth forests. We also looked around for signs of whitewash, nests, and feathers left behind from previous feedings. Then, using a speaker, we would play a call that would incite them to answer, in an attempt to protect their territory.

Spotted owls are geographically divided into the northern, California, and Mexican spotted owl. The listing of the northern spotted owls, a spotted owl subspecies, as a sensitive species has prompted the Forest Service to conduct regular on the three subspecies. Although the California spotted owls have not been affected as greatly, the surveys still serve to shed light on important information about the forest environment. Much like Goshawks, spotted owls prefer old growth forests. However, within the Tahoe national there are not many true old growth forests. Even so, spotted owls are still known to reside in this area. The areas where they reside indicate a unique habitat and as such, it is important to protect the areas where they have adapted. Owl surveys began at sunset to ensure that we conducted them when owls were most active and to avoid making them susceptible to attacks from predators –goshawks often share the
same habitat and have been known to attack spotted owls. Hooting for owls was done for 10 minutes at every predesignated calling point. We strictly adhered to this time constraint, again to avoid making them susceptible to prey. When the ten minutes were up, we would then move on to the next point until each point was reached.

A survey must be conducted for sensitive plants species any time there is a proposed project that has ground disturbing activity. The botany crew creates a floristic list narrowed down from the California Native Plant Inventory, which is approved by the regional forester. From this list they go out and search for these plants. Following the sensitive plant program flow chart (shown in figure 1 of the appendix), the botanists choose how to proceed. Sometimes they don’t find sensitive species; instead, they may find an invasive plant. Currently, the main focus has been placed on the invasive musk thistle. These are biannual plants whose seeds can last up to eight years in the soil. Wind scatters its seeds over vast quantities of land, making it very easy to spread. Success in battling the epidemic is evident in smaller occurrences that have been reduced to zero plants; however, it may be less visible in some areas where there are acres covered in this thistle. As of now, the process is very simple—find the musk thistle and pull it out—but very labor intensive and often times painful due to the prickly nature of the plant.

When all surveys are done and the project is approved, the layout can begin. For Onion creek, the main point was to create a shaded fuel break for nearby residents in case of a fire. The timber crew first went in and mapped the area boundaries using a GPS and maps provided to them by the Vegetation Management Officer. These boundaries depend on vegetation type, slope, and tree size (different size trees may require different equipment). Next came the cruising stage where the value of the timber is assessed and trees are marked to be cut. There are essentially two types of are evaluated—biomass and saw timber. Bio mass is considered a
secondary product; it includes small non-merchantable trees that are too small to be taken to a mill and instead are chipped and sold to a cogeneration plant for power production. To estimate the value of this type of timber we went to different plots within the units and measured the amount of trees that had a DBH (diameter at breast height) between 4.0in and 9.9in and were no more than 1/20\textsuperscript{th} of an acre from the plot center. Saw timber was assessed by measuring the DBH, tree height, and noting any defects present in every 25\textsuperscript{th} tree (on average). Using this information, the economic value of the stand can be calculated and is useful in planning an economically viable project. The actual marking of trees was then done by following the prescription for that unit. In the case of Onion Creek, we were generally looking to create more space between the larger, more dominant and healthy trees while also promoting tree stand diversity. Finally, we did a final sweep of the area to identify and clear potential hazard trees.
PROJECT OUTCOMES

The times I went out with the wildlife crew to complete surveys, we were not successful in finding goshawks, spotted owls, or yellow legged frogs. I did however find a new goshawk nest. The crew was successful in finding goshawks and spotted owls on other days.

While working with the botany crews we did discover new areas where the musk thistle infestation had spread to. We immediately pulled out the plants we found in those areas and recorded our findings for future seasons.

The project in Onion creek has been just about completed. All that is left is for the contract teams to come in and begin the final process- fuels removal.

During my time here, I was able to observe and learn a lot about effective communication and collaboration between the different crews, as well as effective leadership and comradery.
Conclusions

My time with the Truckee Ranger district allowed me to gain invaluable real-world experience in natural resource protection. I would highly recommend agencies and students in the future to follow a similar structure that allows the student flexibility to explore and not be limited by staying with one group or activity throughout the program; therefore maximizing the learning experience, as well as opening up the student’s eyes to more of the possibilities available within natural resource protection and land management.

The experience attained doing surveys and being an active part of these projects will prove very useful in my pursuit of a career as an Environmental Coordinator for the USDA Forest Service as I not only understand more about what the thought process is for a proposed ground disturbing activity, but I also have a better sense of what it takes to properly manage a positive collaboration between many different groups.

All in all, this internship proved to be a successful endeavor that has armed me with immensely priceless experience for the future.
Figure 1. Sensitive plant program flow chart. When any ground disturbing project is proposed, forest service botanists follow these steps.
Figure 2. *Carduus nutans*. Commonly known as musk thistle, botanists in the Truckee Ranger District spend a large portion of the season looking for and pulling out this invasive plant.

Figure 3. Sample birds collection at the Sagehen Creek Field Station. Being held is the King Fisher Bird, commonly found along the Truckee River.
Figure 4. Brook trout at the Sagehen Creek Field Station Fish House.

Figure 5. Filling out survey paperwork in the field.
WORKS CITED

