

Fellow Update Corner

Notes from the Field

June 29, 2022

Over the last couple of weeks, I spent my time wandering around the Wyoming and Salt Ranges following the beeps that emit from collars we have on female mule deer. As I chased after those beeps, I traced the same steps that I have taken many times over the past 8 years, walking into the summer ranges of deer that I have become intimately familiar with.

As I reminisce of my time in this breathtaking country, I am reminded of an incredibly memorable day in the field. A few years back, on the morning of June 2, 2020, I pulled my truck up next to Brian Miller, a technician on the Wyoming Range Mule Deer Project, and parked along the bank of the Smith's Fork River north of Cokeville. Deer 215 had just given birth 6 hours earlier. According to her GPS locations that had transmitted from her collar the night before, she was just across the river and a few miles back. Part of our job was to find and collar the fawns she had given birth to early that morning. Deer 215 was a new animal; we had captured her for the first time a few months earlier during the 2019-2020 winter and I wasn't yet familiar with the drainage she had just given birth in.



Brian and I walked along the bank of the river, looking for the safest place to cross. After finding a spot that looked like it was a little bit slower moving than the rest of the river, Brian and I just grinned at each other before slowly making our way across with slow, careful steps. Despite our best efforts on finding a good place to cross, the water was fast and high, reaching past my hips and soaking the bottom of my pack. After a few minutes, however, we were safely on the other side. With our boots back on, we started our hike through the rolling sagebrush hills, willow complexes, and thick conifer and aspen stands that led to deer 215's summer range. As we followed game trails back to her, we talked about the tracks we were seeing along the trail, the intricate beaver dams we were walking past, and the

eggs that sat speckled and quiet, nestled in the sagebrush.

When we were about a half mile from deer 215, I pulled out a telemetry receiver and antenna. I could clearly hear the beeps emitting from her collar, it sounded like she was right where she had been the night before, hanging out at the base of a bowl in the middle of a thick aspen stand. Quietly, Brian and I climbed a little over 1,000 feet up the ridge to the north of her hoping we could sneak down from above and get a glimpse of her before she knew we were there. Only 300 yards below us, she was hidden in a sea of green aspen. Slowly, we picked our way down through delicate game trails following the beeps of her collar, trying to remain as silent as possible. When we were about 50 yards from her most recent GPS location we heard a loud crash. She had either heard or smelled us before we had the chance to see her. We pushed our way through the thick cover to where we had heard her bust, our eyes combing the ground for small, spotted mounds as we moved. Looking for fawns sounds like a relatively straightforward task, but can be incredibly hard in reality—their spots look like the sun trickling through the aspens, their brown fur like duff and old pine needles. Countless times, I've set my foot down inches from a fawn before I realized it was there (or the person behind me had to point it out to me). At only 6 hours old, deer 215's fawns had moved quite a ways from where she had given birth. Brian and I searched for about 20 minutes before we found the first one. She was curled up at the base of an aspen surrounded by lupine, dandelion, and strawberry. The only movement that indicated she was a living creature and not just a part of the landscape was the slow twitch of her nose as she inhaled and exhaled. It took almost another full hour before we found the second fawn, about 60 yards from where we first spotted her sister. We collected data quickly and finished by placing a small expandable collar on each. We left them where we found them, but as



we began our hike out I am sure they quietly moved to a new spot, disappearing back into the foliage and cover as they waited for their mom to return.

Once we crossed the river again and were safely back at the truck I finished filling out the datasheet, including giving them both a unique identifier—F504 and F505—they were the fourth and fifth fawns out of the 94 that we would end up catching that summer. F504 died in the autumn of 2020 from unknown causes, but F505 survived that summer. She just turned two this spring.

I was out helping capture fawns again this summer (2022), and the first deer that I went out on was deer 215—she was a little over a mile from where she had given birth in 2020. We crossed the same spot in the Smith's Fork, and hiked along the same game trails as we made our way to where she had given birth.

This year, she was standing on the edge of an aspen stand; the technicians I was with spotted her quickly and we watched her for a few minutes before we moved in. Unlike in 2020, we found her fawns quickly, only searching for a few minutes before we spotted them both. They were bedded under sagebrush, within 10 yards of each other and close to where their mom had been standing. As we were finishing up by putting the collars on deer 215's fawns, we got a message on our inReach—F505 looked like she had given birth for the first time in her life. She was close; only a mile and a half away from where we were at, and only one drainage away from where she was born in 2020. We climbed over a ridge, passing the spot where Brian and I had hiked into in 2020, and to the base of the draw she was in. As we moved quickly up the draw towards her, I could hear the beeps getting louder—we were getting close. We got about 40 yards from her before she jumped out of a small clump of trees. It was the first time I had seen her on her summer range since I had captured her when she was only a few hours old in 2020. I sat for a few seconds, marveling as she bounded up the hill away from us. She had given birth to a single female fawn, a little over 8 pounds. The fawn was bedded about 30 yards from where we had seen her mom run from. After we placed an expandable collar on her, we made our way out, hiking back along the same trails we had come in on.

As we walked back to the truck, I thought about how incredibly blessed I have been to work on a project like the Wyoming Range Mule Deer project. Over the past 8 years, I've become so familiar with these animals in a way that most other people don't have the opportunity to. Most of the time, research just gives us a single snapshot of a random deer during one or two summers of their lives. But with long-term research projects, we can learn what animals have been doing from the day they were born, and in many instances, what their mothers and grandmothers were doing in the generations before them. This kind of research tells us more than just what an animal is doing. It gives us insight into why these animals make the decisions they make, and do the things they do.

Updates from the Office

In the past year, I have shifted to spending much more time in the office digging into the data I have spent years climbing through the mountains to collect. While sitting behind a computer may seem much less appealing than hiking through the mountains, there is something exhilarating

about figuring out why animals are doing the things they do, and trying to disentangle the complex and nuanced observations that I have from my time in the field.



Right now, I am working on part of my dissertation, as well as several collaborative efforts with other scientists in the Monteith Shop. Recently, we submitted a paper to the *Journal of Wildlife Management* that looks at how capture and handling animals many times throughout their lives—something that is necessary for long-term research projects like the Wyoming Range Mule Deer project—affects their survival.

There has been considerable research over the past 50 years to understand the most effective way to capture and collar big game animals. Many scientific papers have shown that helicopter net gunning is the safest and most efficient method for big game research in most cases. Regardless of the type of capture, with all capture efforts, there is a small amount of risk associated with capture and handling efforts; 3% is often the accepted rate of mortality for big game research.

As researchers it is our responsibility to understand the effect we have on study animals, and to minimize risk wherever and whenever possible. Long-term research projects that capture the same animals multiple times a year throughout an animal's life are not very common, and there has not been much research looking at the potential consequences of catching animals many times throughout their lives.

Using data from the Wyoming Range Mule Deer project and other long-term projects in Wyoming, we found that there was no effect of the number of times an animal was captured (up to 17 times for some animals), how long an animal was handled, their age, fat levels, or the month of the year (December or March) they were captured on if an animal died during capture and handling. In Wyoming, the risk of mortality due to capture is much lower than the accepted standard of 3%. Over 10 years and out of 2,399 captured animals we had only a 1.58% mortality rate during our capture efforts.

Our results show that repeated captures do not increase the risk associated with capture and handling of big game. Repeated capture is a necessary part of long-term research,



which gives us a much more nuanced look into the lives of the animals and populations that are so important to many of us across the west.

Without the long-term aspect of the Wyoming Range project, I may have only gone to catch 215's fawns in the summer of 2020. I would only have been able to speculate if she came back year after year to give birth in that spot. I never would have known that her daughter, F505, would give birth so close to the spot she was born two years earlier, or that she would give birth on the same day as her mom. These kinds of observations have changed my relationship with mule deer—I used to see a deer moving through the woods and would just appreciate its beauty in the moment before moving on with my day. Now, when I see a deer trotting through the sagebrush or stotting up a steep incline, I think about all of the things that must have happened for me to see that particular animal in that particular spot. Was she born in this place? Had she given birth in this spot before? Was the young buck I had seen a few minutes earlier related to this doe? Will her offspring inhabit this drainage for years to come?

Understanding the complexity of mule deer and the reason they make the decisions that they do can help us better understand why populations change through time. Is the drainage that you've hunted for years no longer brimming with deer each autumn? Are the bucks that you're seeing getting smaller or larger through time? Long-term data allows us to truly disentangle and understand why populations are changing, and gives us insight into what management strategies can help us keep herds healthy and abundant.

Muley Fanatic Foundation Fellow

Taylor LaSharr is the current Muley Fanatic Foundation Fellow. She has been a graduate student in the Monteith Shop since 2015. She began her time in Wyoming working as a technician on the Wyoming Range Mule Deer Project in the summer of 2015. For the next few years, she volunteered and helped with fieldwork for the project while she was working on her MSc project. In 2018, she began her PhD on the Wyoming Range Mule Deer Project. Her research is looking at the effects bad winters have on mule deer populations. She loves being outside, looking at and thinking about mule deer, taking pictures of critters, spending time in the Wyoming Range, and when not doing field work, hiking, biking, skiing, and swimming with her dogs on Wyoming's public lands.



Photo Credit: Chris Martin