



# THE GREAT PLAINS MONITOR *Monthly*

KEEPING YOU UP TO DATE WITH YOUR NGPN VEGETATION MONITORS

Welcome to the second issue of Great Plains Monitoring Monthly! I am pleased to report that this month, unlike last, our only encounters with fire, deer, and bison were friendly ones. After spending June adjusting to field work and sharpening our botany skills, this July we were able to focus on reading plots more efficiently. It's important we work quickly while monitoring our Black Hills park units because in plots that are densely forested, the added work of collecting tree data can double the amount of time we spend at a plot.

Though we were busy this month, I did find time to once again cook Ellery Watson's tikka masala that I mentioned in July's issue. I wanted to have a photograph to share with you when I published Ellery's recipe which I am doing below at the request of a hungry reader (looking at you Bob). Enjoy! -Logan LaFleur, biological science technician, NGPN



## WHERE WE WERE

### WIND CAVE

JUNE 22-23

JUNE 27-30

JULY 5-6

### MOUNT RUSHMORE

JULY 11-13

### DEVILS TOWER

JULY 11-14

### JEWEL CAVE

JULY 18-20

## Ellery's Chicken Tikka Masala

### Marinade

- 1 cup greek yogurt
- 2 tablespoons lemon juice
- 2 teaspoons ground cumin
- 2 teaspoons ground red pepper
- 2 teaspoons black pepper
- 1 teaspoon cinnamon
- 1 teaspoon salt
- 2 teaspoons minced ginger

Mix all ingredients in a bowl with 1-1.5 lbs. of chicken, lamb, shrimp, or whatever meat you want, really. Let mixture sit in the fridge for 1-2 hours. If making vegetarian, skip this step, though this is super tasty with chicken. When ready to put into sauce, remove meat from the marinade and shake off excess yogurt before placing in the sauce to cook.



### Sauce

- 1 tablespoon of unsalted butter
- 2 garlic cloves, minced
- 1 jalapeño minced
- 2 teaspoons ground coriander
- 1 teaspoon ground cumin
- 1 teaspoon paprika
- 1-2 teaspoons garam masala (start with 1 and add to taste)
- .5 teaspoons salt
- 1 8oz can of tomato paste
- 1 can of coconut milk
- .25 cups fresh chopped cilantro

Mix all sauce ingredients into a pan and bring to a simmer. Add your meat and hard veggies first (Ellery just adds one white onion, I've also been adding a red bell pepper). Adding too many ingredients will result in a thin sauce. Mushrooms would be a good substitute for meat, but add that in the last 15 min. of cooking so they aren't overcooked. Simmer sauce covered until meat is cooked or hard veggies are soft, remove cover and let simmer for 15 mins., adding in soft veggies. Serve over basmati rice and enjoy.



# WIND CAVE NP



In our network, Wind Cave National Park (WICA) has become renowned for its botanical diversity. The park has a wide range of habitat: from ponderosa understory, to rolling grassland, to prairie dog towns and rocky outcrops. Every day of monitoring at Wind Cave brings surprises and challenges. Our work there has been called a “final exam” that tests how far our botany skills have come throughout the season. Last year this exam came early when we had to postpone our Badlands monitoring due to wet or slumping roads. Because last year was my first with the Network, I particularly missed those couple weeks of monitoring the slightly less diverse Badlands that serve as preparation for the big test. I was never actually in any real danger of failing. It was not by accident that I wound up sitting next to the smart kid in class. Mike Bynum, who in May had led our botany training, joined us for our Black Hills monitoring. This year, though far better prepared, I was grateful to have Mike back with us. I am proud to say I found myself peeking at his answer sheet much less frequently than the year before.

While monitoring Wind Cave, it is fairly rare to see visitors even on designated hiking trails. Even less common is an encounter in the backcountry. So we were surprised one morning when a figure appeared on the edge of the forest and began to walk toward our plot in the middle of a prairie dog town. As he came nearer it became apparent that he was in uniform. We called hello to the fellow Parkie, and he stopped to chat. He admitted that he had been equally surprised to see anyone out there and less surprised when he realized we were the resident “grass counters”. He was biological science technician Duane Weber, and he was out there checking on a couple of Cooper’s Hawk nests that he had confirmed were still unoccupied. Before he left us to our grass counting, he told us that one of the burrows nearby was home to a family of black-footed ferrets. We remained on the lookout for the rest of our time at the plot, but we did not achieve a rare midday sighting.



*Pellaea gastonyi*, Gastony’s Cliffbrake





# MOUNT RUSHMORE NMEM

This year was my first trip to monitor Mount Rushmore National Memorial (MORU). It meant I had to miss out on monitoring Devils Tower, but I have to say: monitoring sparse vegetation in the understory of an open ponderosa forest is some of the most pleasant monitoring I've ever done. This pleasantness is common to all our ponderosa forest monitoring, but MORU is the only park that is entirely forested. That is not to say that the monitoring was without its challenges. We visited one plot that had a slope of about 45%. The combination of slope and terrain (loose pine needles on granite) made for some slow monitoring and achy feet, but the botany of MORU plots more than makes up for any difficult terrain. Our quadrats are usually mostly empty; the thick layer of pine needles precludes any sort of dense vegetation, but the few individuals that are present are very different from the grassland species I'm used to seeing. It's a nice change to puzzle over a new species rather than struggling to determine whether I'm looking at one dried up grass or another. Mike Bynum was able to join us again and was invaluable to my retention of so many new species.





# DEVILS TOWER NM

Devils Tower National Monument (DETO) is always our first camping trip of the season. This year I was not part of the crew that was scheduled for travel to DETO, but last year I went and had a great time. I was able to see parts of the park I had never seen before. I particularly remember the beauty of Red Beds Trail and the warnings from law enforcement to keep an eye out for black bears as there had been a recent sighting. We also were able to spend time with several members of park staff who were kind enough to help us out in the field. I remember hearing stories and being impressed that some of the staff we worked with were required to climb the tower regularly to check on falcons' nests. We joked about climbing the tower ourselves to monitor the vegetation on top. No one doubted the value of the data that would be obtained, but some of us (or one of us at least) doubted our ability to reach the top in order to do the monitoring. As it turns out, the vegetation atop Devils Tower was monitored this year, and not for the first time! Intrepid botanist Hollis Marriott borrowed some of our field equipment in order to use our protocols in the continuation of her ongoing monitoring of the summit.

Hollis keeps a blog detailing some of her many geological and botanical adventures called [In the Company of Plants and Rocks](#). Her life is so interesting that her latest trips to the top of Devils Tower have yet to warrant a post, but an earlier trip to the top did [make the cut](#). During her 2012 monitoring she identified 28 species of vascular plants and says that after this year's work the list will likely grow to 45 or 50 species.



We were able to stay dry during dinner last year when biotech Lee Mickelson threw together an impromptu shelter.



# JEWEL CAVE NM

Jewel Cave National Monument (JECA) is ecologically very interesting. It is fascinating to know that not long ago the entire park unit was forested. Now, several of the plots we monitor lack the understory species we expect to find in our Black Hills parks and instead exhibit species typical of the mixed grass prairie that is emerging in these burned areas.

Jewel Cave is aesthetically very interesting as well. Feelings amongst our crew are mixed, but I have always found a landscape of burned snags sublimely beautiful. Though, I will admit that I've been uneasy once or twice while monitoring near the swaying behemoths on gusty days.

It is always a pleasure to work with members of a park's resource management crew. My first opportunity to do that this season was at Jewel Cave. Often these employees are working as interns or otherwise just getting their start in the Park Service. It's fun to share some identification techniques with people who are curious and interested and to commiserate about the difficulty of finding a permanent job.

We look forward to returning to JECA and MORU for our forest structure monitoring later this September.



Thanks for reading this month's *Great Plains Monitor Monthly*. Look out for our last issue in a month's time. In it, you'll read about our visits to Theodore Roosevelt National Park, Knife River Indian Villages National Historic Site, and Fort Union Trading Post National Historic Site. The NPGN Fall Newsletter will follow shortly thereafter.

If you have questions about any of the content within this publication, you may email Logan LaFleur at [logan\\_lafleur@nps.gov](mailto:logan_lafleur@nps.gov) or our network coordinator, Kara Paintner-Green at [kara\\_paintner@nps.gov](mailto:kara_paintner@nps.gov). If emailing Kara, be sure to mention how much fun parties at her new house look, and maybe you'll get an invitation to the next one.