

2020 Summer Advisory Board Meeting
Wildlife and Range Research Update
Ben Geaumont and Alex Rischette

Graduate Students – Co-Advised

Jonathan Spiess, PhD – Range Sciences, Evaluate livestock selection, vegetation, soils, and fire behavior within patch-burn grazing research (Devan McGranahan).

Jasmine Cutter, M.S. – Range Sciences, Evaluate pollinators in patch-burn grazing research (Torre Hovick). **COMPLETE**

Alex Rischette, M.S. – Range Sciences, (Torre Hovick). **COMPLETE.**

Hailey Keen, M.S. – Range Sciences, Honeybees and shelterbelts (Torre Hovick)

Kimberly Zralka, M.S. – Range Sciences, Restoration of flowering plants in existing grasslands. (Torre Hovick).

Additional Graduate Student Committees

Chyna Pei, PhD – Range Sciences, Statewide pollinator survey.

Cameron Duquette, PhD – Range Sciences, Grassland bird response to patch-burn grazing in mixed-grass prairie.

Savannah Adams, M.S. – Range Sciences, Pollinator use of annual forage plots and pinto beans.

Rachel Ouren, M.S. – Natural Resources Management, plant invasion on the Little Missouri National Grassland.

Adrienne Antonsen, M.S. – Statewide survey of butterflies. **COMPLETE**

Current Research Projects

1. An Assessment of the importance of shelterbelts as early season nectar and pollen resources for domesticated honeybees. (Hovick, Harmon, Zeleznik, Otto, Kral-O'Brien).
 - a. Monitoring 15 sites with T2 Honey Company, and 10 sites with Browning Honey near the Central Grasslands Research Extension Center.
 - i. Monitor weights using hive scales and collect pollen to assess use.
2. **The utility of unmanned aerial systems for monitoring sharp-tailed grouse leks** (Rischette, Hovick, and Nowatzki).
 - a. Evaluate the feasibility of using UAS to locate and monitor leks of sharp-tailed grouse.
 - i. Published April 2020.

3. **Using drones to assess floristic resources for pollinators over space and time. (Rischette, Duquette, and Hovick).**
 - a. Evaluate if we can use imagery collected with drones to count flowering plants on the landscape. Can we see the flowers? Can we accurately identify them? Does color matter? Does flower age matter?
4. **Restoring disturbance to old Conservation Reserve Program Fields to Promote Ecosystem Services.** (C. Schauer, T. Hovick, R. Limb, and D. McGranahan) Funded by AFRI.
 - a. Evaluate the effects of patch-burn grazing in Conservation Reserve Program grasslands on livestock, vegetation, pollinators and wildlife in western North Dakota.
 - i. Livestock, birds, vegetation, bees and butterflies
 - b. Six, 160 acre pastures
 - i. 3 with sheep
 - ii. 3 with cow/calf pairs
 - c. Three burns completed in October 2019 and three in spring 2020.
- 4a. **Evaluate the ability of over seeding native forbs following prescribed fire to enhance habitat for pollinators. Assess differences in seeding method and impact of herbivory on forb establishment** (Funded by Game and Fish).
 - d. Seed (5), 1-acre plots within each prescribed fire area in mid-March.
 - e. 2017-2019 broadcast seed, 2020-forward no-till drill seed.
5. **Monitoring native pollinator communities throughout North Dakota: Status and Management considerations for bees and butterflies.** (CO-PIS: R. Limb, T. Hovick, and J. Harmon) Funded by ND Department of Agriculture.
 - a. Conducting statewide pollinator surveys. Assess land use, floristic resources and pollinator associations.
6. **Can growing pollinator plots in proximity to pinto beans lead to increased yields?** (Co-PIS: T. Hovick, M. Ostlie, J. Rickertsen, J. Harmon, and R. Limb; Work done in Hettinger and Carrington: Funded by ND Department of Agriculture).
 - a. Establish 1-acre annual forage plots (consist of 18 flowering plants).
 - b. Establish 2-acre bean plots.
 - c. Evaluate pollinator use of pollinator and bean plots.

Additional Projects

Alternative Land Management on Lands Managed for Wildlife – work with private landowner and Game and Fish. – started fall 2019. Funded by Game and Fish Department.

Managing disturbance for multi-functional rangelands: livestock, plant, and pollinator resource management strategies the differentially use fire and grazing – will be done at CGREC, Funded by AFRI.

Peer Reviewed Publications

Geaumont, B.A. and D.L. Graham. 2020. Factors affecting sharp-tailed grouse brood habitat selection and survival. *Wildlife Biology*, 2020(2) <https://doi.org/10.2981/wlb.00633>.

Rischette, A.C., T.J. Hovick, R.D. Elmore, and **B.A. Geaumont**. Use of small unmanned aerial systems for sharp-tailed grouse lek surveys. *Wildlife Biology*, 2020(2) <https://doi.org/10.2981/wlb.00679>.

Spiess et al. 2020. Patch burning buffers forage resources and livestock performance to mitigate drought in the Northern Great Plains. *Rangeland Ecology and Management* 73:473-481.