2021 Winter 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).

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.

Autumn Clark, M.S. – Environmental Science, Public perspectives on prescribed fire.

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).
    a. Monitored 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. **Using drones to assess floristic resources for pollinators over space and time. (**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?

3. **Restoring disturbance to old Conservation Reserve Program Fields to Promote Ecosystem Services**. (C. Schauer, T. Hovick, R. Limb, J. Harmon and D. McGranahan).
    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. Switching to spring prescribed fire – better patch contrast.

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.

4. **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. Access land use, floristic resources and pollinator associations.

5. **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.

6. **Land use and severe weather events, ring-necked pheasant survival in a changing landscape.**

   a. Trapped 13 hens spring 2020 and 17 hens fall 2021. **Currently monitoring 6.**

<u>Additional Projects</u>

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.

<u>Peer Reviewed Publications, In Revision.</u>

Rischette et al. 202X. Duck Recruitment in Former Conservation Reserve Program Lands. In Revision.

Cutter et al. 202X. Cattle and sheep differentially alter floral resources and the native bee communities in working landscapes. In Revision.

Antonsen et al. 202X. Intra-annual spatiotemporal dynamics of the monarch butterfly (Lepidoptera: Danaidae), regal fritillary (Lepidoptera: Heliconiinae), and their floral resources in North Dakota, USA. In Revision.