

2019 Winter Advisory Board Meeting
Wildlife and Range Research Update
Ben Geaumont and Dan Graham

Strategic Plan Aim - Conduct applied research that investigates the compatibility of agriculture and wildlife

Graduate Students – Co-Advised

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

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

Alex Rischette, M.S. – Range Sciences, Evaluate wildlife response to patch-burn grazing on Post-CRP (Torre Hovick).

Additional Graduate Student Committees

Adrienne Antonsen, M.S. – Entomology, Statewide pollinator survey.

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

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

Current Research Projects

- 1. The utility of unmanned aerial systems for monitoring sharp-tailed grouse leks** (Hovick, Graham, and Nowatzki).
 - a. evaluate the feasibility of using UAS to locate and monitor leks of sharp-tailed grouse.
- 2. Restoring disturbance to old Conservation Reserve Program Fields to Promote Ecosystem Services.** (C. Schauer, T. Hovick, R. Limb, 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. Six burns completed in October 2018
- 2a. Evaluate the ability of over seeding native forbs following prescribed fire to enhance habitat for pollinators.**
 - a. Seeded (5), 1 acre plots within each prescribed fire area in mid-March 2018
- 3. Annual forage mixes for southwest North Dakota: influence of planting date on forage production and pollinator communities.**
 - a. Interested in how incorporating annual forages into food plots for wildlife and forage for livestock may benefit pollinators and other insects.

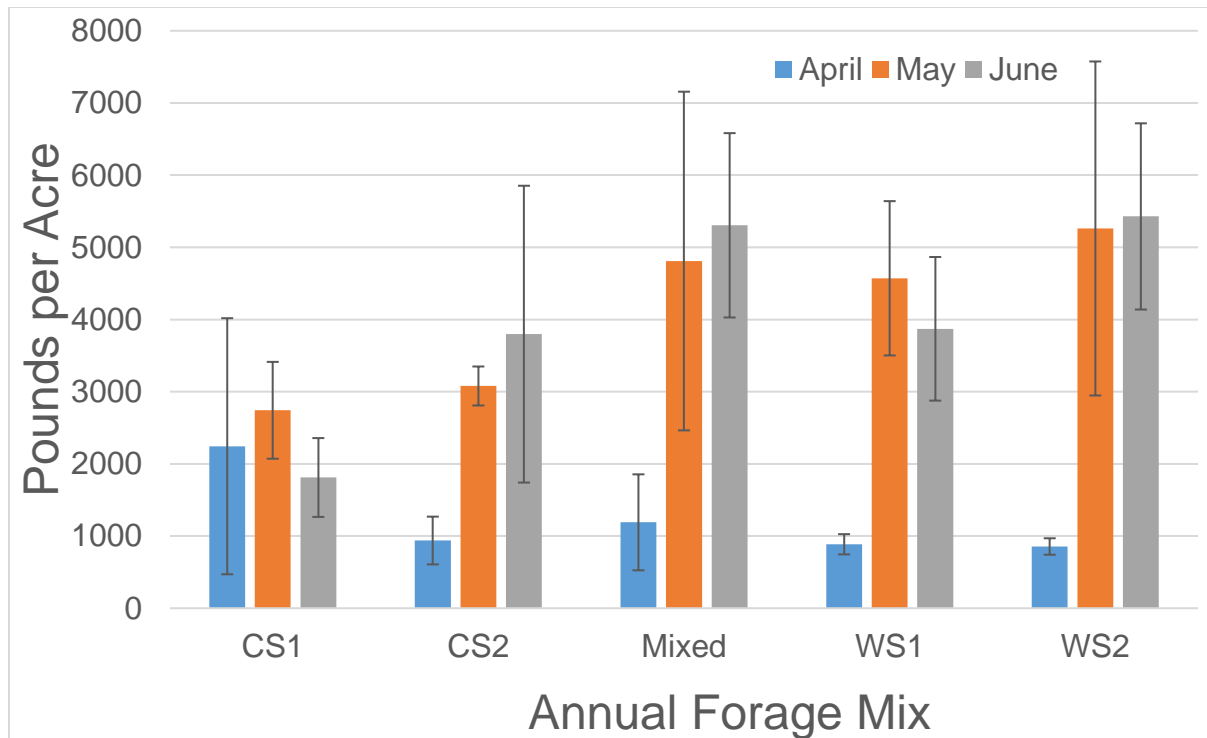
- b. Hammered by hail.
- 4. **Monitoring native pollinator communities throughout North Dakota: Status and Management considerations for bees and butterflies.** (CO-PIS: R. Limb, T. Hovick, and J. Harmon)
 - a. Conducting statewide pollinator surveys. Access land use, floristic resources and pollinator associations. Funded by ND Department of Agriculture.
- 5. **Evaluate a livestock-crop integrated system using annual forages, winter wheat and sheep. Determine livestock gains, crop production, insect use, and changes to soils.**
 - a. Winter wheat was a complete failure
 - b. Annual forages were set back by hail
- 6. **Evaluate the effect of growing annual pollinator plots on kidney bean production in ND.** (Co-PIS: T. Hovick, M. Ostlie, J. Harmon, and R. Limb)

Peer Reviewed Publications

- McGranahan, D.A., **B.A. Geumont**, and J.W. Spiess. 2018. Livestock GPS collars based on an open-source datalogger, survives field conditions and informs best practices for logging intensity. *Ecology and Evolution* 8:5649-5660.
- Norland, J.E., C.S. Dixon, D.L. Larson, K.L. Askerooth, and **B.A. Geumont**. 2018. Prairie reconstruction unpredictability and complexity: What is the rate of reconstruction failures? *Ecological Restoration*: Accepted July 2018.
- Geumont, B.A.** W. Mack, A.R. Lipinski, T.J. Hovick, R. Limb, and K.K. Sedivec. 20XX. Plant and bird community dynamics in mixed-grass prairie grazed by native and domestic herbivores. *Rangeland Ecology and Management*, (In Press).
- Geumont, B.A.** and J. Norland. 20XX. Influence of seed mixtures on native plant establishment in the badlands region of North Dakota. (Accepted 2/10/2019).

Sustainable Agriculture Research and Education Grant Idea – An Assessment of the importance of shelterbelts as early season nectar and pollen resources for domesticated honeybees.

We submitted a preproposal in October and have been invited to submit a full proposal. As part of the full proposal we will be forming an advisory board to help guide the project. If you are interested, in bees, trees or honey, let's talk.



Average planted annual forage production from 2016-2018 across five treatments replicated three times each at three different planting dates. Forage production was measured mid-August. Averages do not include biomass attributed to weed species. We designed annual forage mixes to provide biomass for livestock and nectaring resources for pollinators.

CS1 = Cool Season 1 = buckwheat, lentil, flax, oat, barley, radish, safflower, sunflower, turnip

CS2 = Cool Season 2 = buckwheat, pea, flax, millet, barley, radish, safflower, sunflower, turnip

Mixed = buckwheat, lentil, turnip, radish, barley, sorghum-sudan grass

WS1 = Warm Season 1 = flax, radish, sunflower, turnip, proso millet, sorghum-sudan grass, barley

WS2 = Warm Season 2 = buckwheat, lentil sunflower, radish, proso millet, sorghum-sudan grass, flax, safflower