ADDING ANIMALS TO ECOSYSTEMS: The Case for Managed Livestock Grazing

Bela Sánchez | *Organization:* SkyRoot Farm

@bela8299

Site Supervisor: **Eli Wheat**, Owner, SkyRoot Farm

Faculty Advisor: **Doug Collins**, Center for Sustaining Agriculture and Natural Resources, Washington State University

QUESTION:

What are the benefits and challenges of utilizing a managed livestock grazing system?

BACKGROUND AND CONTEXT

Industrial meat production is detrimental to the environment:

- Agriculture drives 75% of global land clearing and degradation and about 25% of global carbon emissions.

Managed livestock grazing offers an alternative meat production system which is commonly believed to improve health for planet, animal, and human being, including:

- Decreased weeds and erosion,
- Improved soil fertility,
- Higher yield of a higher quality product (Figure 1).

However, both the ecological impact and the climate change mitigation capacity of managed livestock grazing remain inconclusive.

Figure 1: The goatherd at the end of a pasture rotation; they are done eating and ready to move to fresh pastures. The goats typically spend 3 to 4 days on a given pasture, depending on the forage availability.

INTERNSHIP AND METHODS

From July to December of 2019, I served as the primary livestock intern at SkyRoot Farm on Whidbey Island.

During my internship, I:

- Conducted a randomized grazing experiment utilizing goats and chickens on a 9-acre pasture (Figures 2 & 3).
- Collected soil samples before and after grazing to measure changes in soil nutrient composition.
- Conducted interviews with 5 livestock farmers and 1 soil scientist.
- Conducted a literature review of existing studies and articles related to managed grazing systems.

Figure 2: A typical pasture before grazing. The vegetation is tall and thick.

Figure 3: A typical pasture after grazing. Much of the vegetation has been trampled and/or eaten, and what remains only grows in small clusters.

RESULTS

BENEFITS

Different grazing systems provide different benefits to the farmer:

- Continuous grazing offers the highest gross yields.
- Rotational grazing is more likely to promote biodiversity and ecological function.

CHALLENGES

"It's so land intensive ... And a lot more time consuming to do the rotations and move the animals." – Rotational grazing farmer, Whidbey Island, WA

"The first summer here we didn't see a single dandelion, and now there are fields covered in them, which is a sign of great soil health." – Livestock farmer, Chelsea, VT

- There is no consistent data illustrating that grazing increases species richness or biodiversity of pasturelands.
- Evidence of increased carbon sequestration capacity is insufficient.

Due to the COVID-19 pandemic, I do not have results from the grazing experiment soil samples.

IMPLICATIONS

- The available scientific evidence is incongruent with the lived experience of managed grazing practitioners observed in this study.
- There is a need for balance between the anecdotal and observational evidence of practitioners and the randomized experiments of Western science.
- Practitioners and researchers must be in constant conversation to expand the knowledge held by both.

ACKNOWLEDGEMENTS:

Thank you to my site supervisor, Eli Wheat, my faculty advisor, Doug Collins, and every student & faculty member in Environmental Studies that I have had the pleasure of knowing. Thank you to my entire team & family at SkyRoot Farm, who made each day more joyful than the one before. Thank you to my mom, for fielding every panicked call about getting this project done with grace and love. Most of all, thank you to these animals and this land, for feeding us.

* quotes edited for brevity and clarity