

Soil Health Sampling Report

Overview

The Farms and Fish soil sampling program is dedicated to enhancing the health and productivity of agricultural lands through continuous soil monitoring. Friends of the Teton River (FTR) collaborates with producers and local ag service providers to implement soil health monitoring. Together, they work to interpret soil health tests, conduct field visits to demonstration farms, and develop comprehensive soil health report cards, aiming to deepen the understanding of the interaction between soil health and water quality/quantity.



Organic Matter Analysis and Managed Grazing on the Stone Farm

Over-Wintering Feed Management and Prescribed Grazing at the Stone Farm implemented an innovative hybrid bale or swath grazing technique combined with a summer prescribed grazing plan as part of the Teton River Agricultural BMP Initiative. The project focused on improving soil health and livestock nutrition by utilizing advanced infrastructure to manage grazing intensity, frequency, timing, and duration. Also by utilizing GPS technology to spread harvested forages evenly across perennial pastures during the winter, the practice aims to enhance soil organic matter, aggregate stability, and the microbiome, leading to improved soil functions such as infiltration, nutrient cycling, and weather resilience.

One of the primary indicators of soil health is soil organic matter. This parameter was used as a soil health indicator for the Stone Farm. Soil that has holds high organic matter has physical, chemical, and biological benefits including nutrient and water holding capacity, water infiltration rates, improved soil aggregate stability, all leading to improved drought resilience (The Value of Soil Health- south Dakota NRCS).

Location

The Stone Farm is located in the Teton River sub-watershed, southwest of Driggs, Idaho.

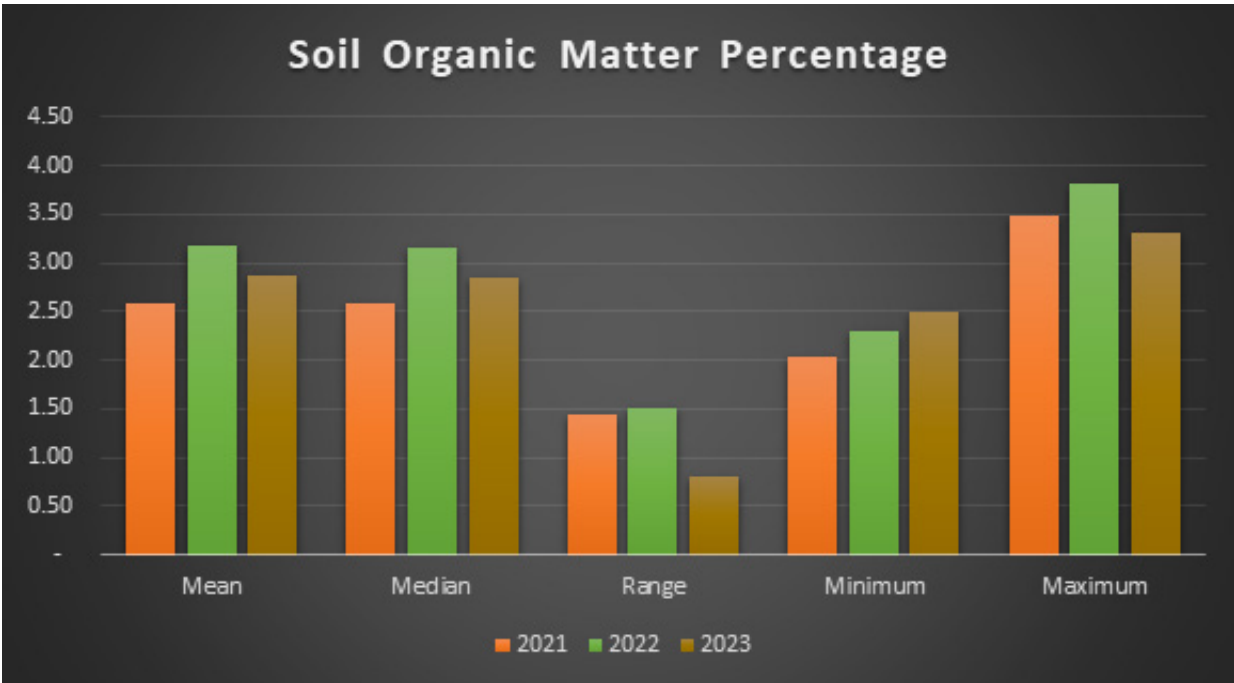
Methods

Samples were taken over 3 years. Utilizing the grid sampling method, 12 individual soil samples taken each year.

Soil Organic Matter Percentage			
Sample Location	2021 data	2022 data	2023 data
1	3.14	3.67	3.1
2	2.71	3.67	3.3
3	3.48	3.66	3.1
4	2.49	3.22	2.9
5	2.95	3.82	2.9
6	2.64	3.35	2.7
7	2.74	2.98	3
8	2.04	2.31	2.8
9	2.52	3.03	2.7
10	2.08	2.93	2.5
11	2.27	2.42	2.8
12	2.04	3.08	2.6



Results



Analysis

The most productive agricultural soils generally have 3–6% soil organic matter. Soil samples on the Stone Farm showed an increase in organic matter mean and median in 2022 & 2023 when compared to baseline data in 2021. Also worth observing is the minimum value observed each year and how that correlates to a decrease in the range from the lowest percentage value to the highest percentage value. The combination of winter feed management and summer grazing implemented on the Stone Farm has provided valuable insights into sustainable practices that improve both livestock productivity and soil quality in Teton Valley.

Conclusions and Recommendations

The collaborative efforts exemplified by agricultural service providers, FTR, and local ag producers, have now successfully streamlined the soil sampling process. Recognizing the need for efficiency in collecting, interpreting, and managing soil data, this initiative has been crucial for producers who heavily rely on data-driven operations. The program’s emphasis on engaging with producers and delivering high-quality data has proven essential for decision-making. Notably, this model has demonstrated transferability and increased adoption of sustainable practices in Teton County and other high desert areas of Idaho and the Intermountain West.

