

Site A5 - NVL Enterprises



The A5 site is located at NVL Enterprises and is part of the Peace Region Living Lab (PRL). The farm produces annual grain crops as well as forage seed.

The producer wanted to determine whether including fescue in an annual cropping rotation could improve soil health and build soil organic matter while maintaining a productive cropping system. Like many producers in the Peace Region, they have long believed that fescue benefits the soil but wanted to measure and confirm those improvements. At the same time, the project explores one of the common challenges of this practice—transitioning the field back from perennial forage to annual crop production.

The best management practice (BMP) being evaluated is the integration of fescue into an annual cropping system. The BMP field was established by interseeding fescue with an annual crop before returning the field to annual crop production, while the check field remained in a conventional annual crop rotation throughout the study.

Soil sampling has shown organic matter levels have not changed in the check field and that soil pH is remaining almost stationary. Our soil reports show that organic matter in the top 6 inches of soil has remained at 5.3% from 2024 to 2025 and pH has only risen from 5.7 to 5.8. The BMP field yielded similar results, as organic matter has reduced slightly from 5.4% to 5.0% and pH rose slightly from 5.7 to 5.8. This interpretation may change with the addition of more data.

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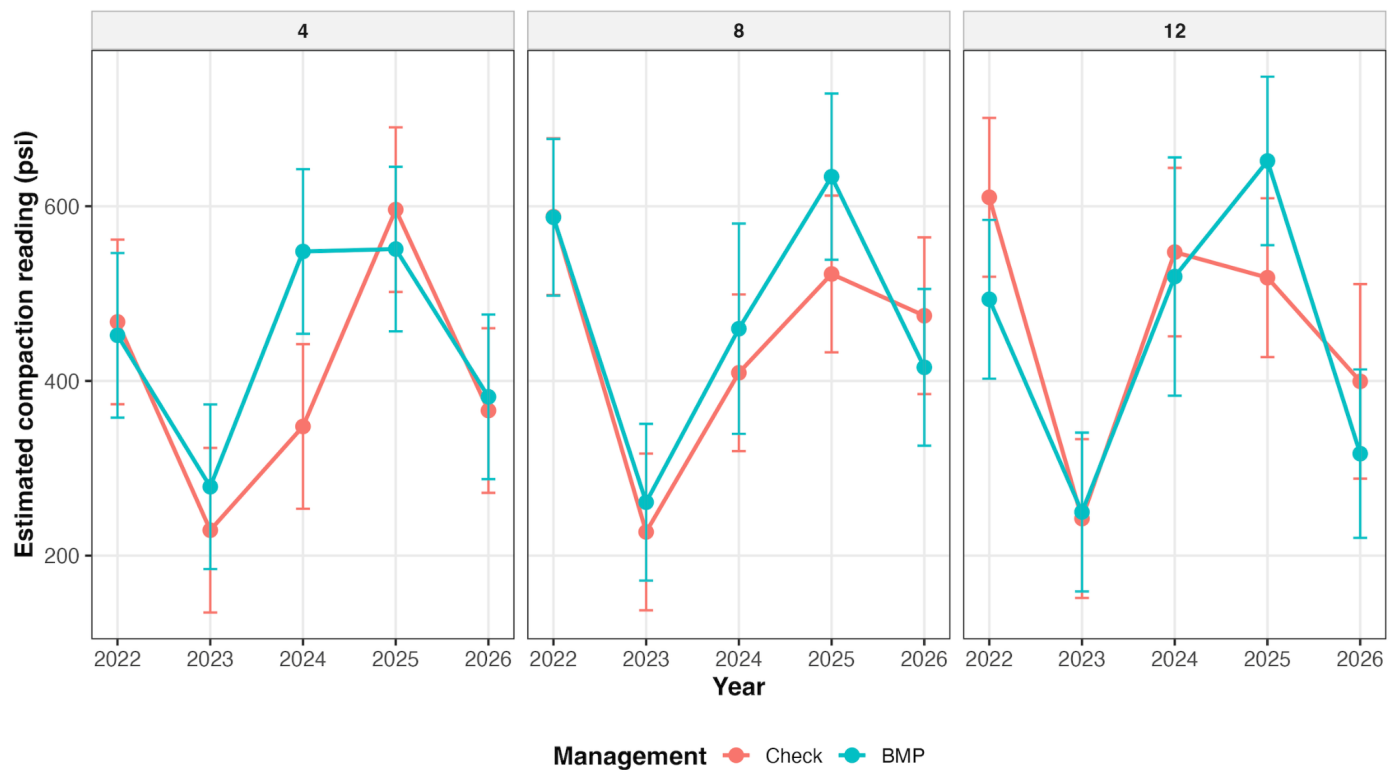


Figure 1. Model-estimated soil compaction (penetrometer resistance) measured at 4-, 8-, and 12-inch depths from 2022 to 2026.

Soil health responses at this site were mixed over the five-year monitoring period, with no consistent advantage observed for either management system based on soil health indicators evaluated to date. While the BMP field showed improved water infiltration in 2022 and especially in 2024, those gains were not maintained in later years, when infiltration was lower than the Check. Similarly, soil compaction varied among years and sampling depths, with the BMP showing both higher and lower penetrometer resistance depending on the year and depth. The integrated soil health score followed a similar pattern, with slightly higher scores under the BMP in 2022 but generally lower scores in subsequent years. These findings suggest that soil health responses at this site were influenced by year-to-year environmental conditions and highlight the importance of evaluating management practices over multiple seasons using several complementary soil health indicators.

Note: Laboratory analyses of soil organic carbon and related carbon fractions have not yet been completed and are therefore not included in this interpretation. These results will provide additional insight into longer-term soil health changes and will be summarized once available.