

Calibration Report: Low N Sedimentary Site

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Soil Solution Results

Table 1: Table 3: Average Soil Solution Concentrations of Reliable Months

Soil Layer	$\mu\text{mol/L}$															
	Ca	Mg	K	Na	NO3	NH4	SO4	Cl	PO4	DOC	Al	Si	H+	pH	R	HR
Layer 1	13.72	18.2	17.2	45.7	2.472	2.369	24.4	48.6	1.098	402	0.12362	11.9	14.81	4.83	44.3	13.18
Layer 2	16.14	22.1	19.0	54.6	1.573	1.202	25.4	59.0	0.990	639	0.25390	27.2	23.17	4.64	63.8	27.49
Layer 3	22.66	26.7	22.2	49.4	1.224	0.913	25.4	66.4	0.875	698	0.17118	39.5	18.45	4.73	71.7	28.00
Layer 4	8.99	15.6	14.4	47.1	0.760	0.936	13.0	57.3	0.468	425	0.01979	47.6	17.77	4.75	43.9	16.84
Layer 5	12.26	20.2	14.6	49.6	0.687	1.741	12.7	65.5	0.242	424	0.00553	49.5	8.23	5.08	47.4	13.18
Layer 6	11.53	18.4	16.6	52.1	0.669	1.990	12.7	72.2	0.319	386	0.00719	53.1	10.12	4.99	42.4	12.82
Layer 7	14.72	20.1	15.5	58.8	0.680	2.778	12.8	78.8	0.333	430	0.00449	57.4	7.02	5.15	48.8	12.55
Layer 8	14.20	18.2	17.6	66.1	0.690	3.298	12.7	78.0	0.267	426	0.00285	59.6	4.73	5.32	51.4	9.46

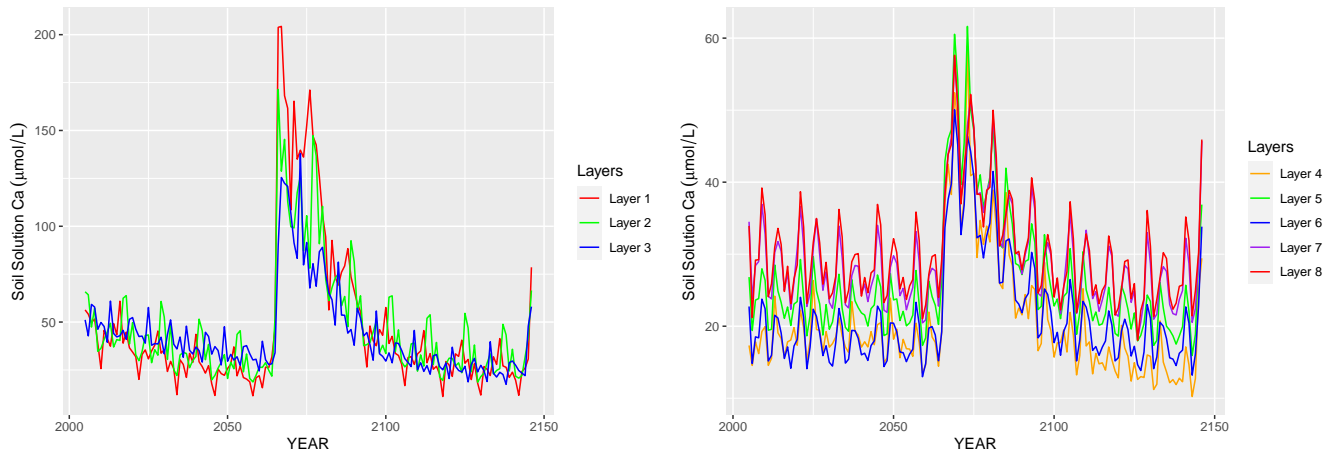


Figure 1: Figure 1: Monthly Calcium Concentrations by Soil Layer

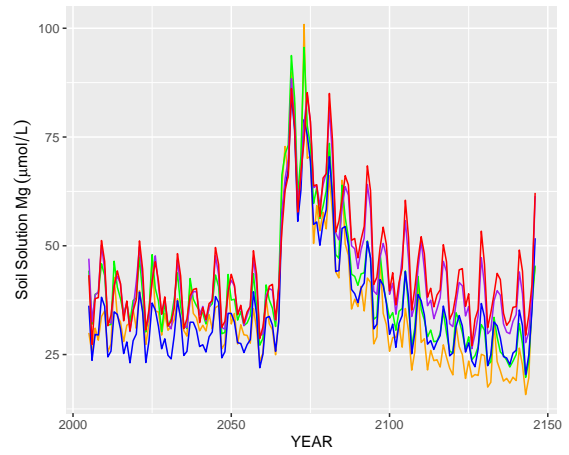
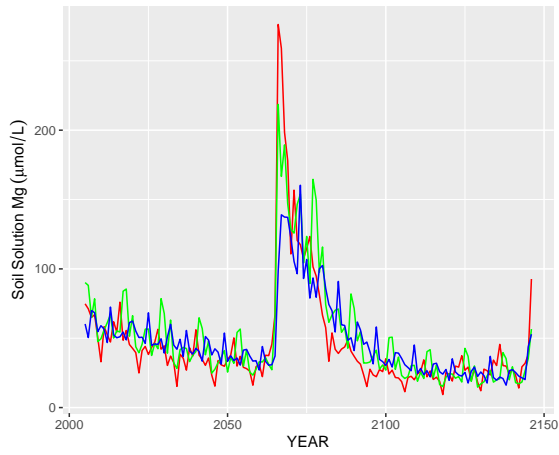


Figure 2: Figure 2: Monthly Magnesium Concentrations by Soil Layer

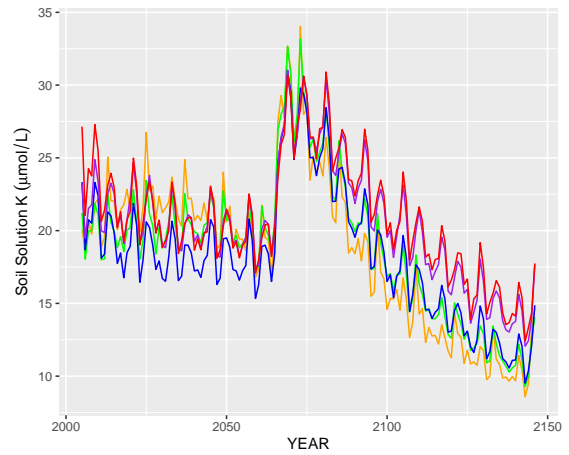
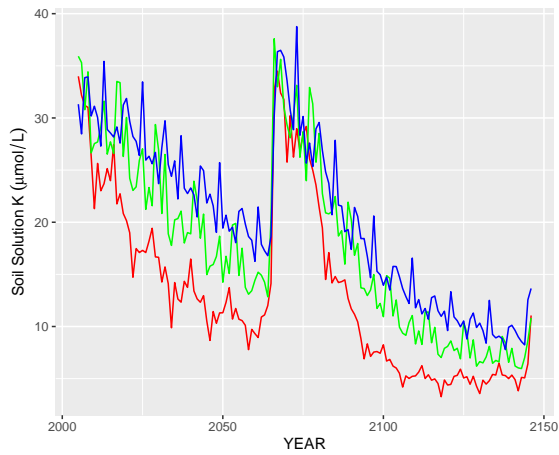


Figure 3: Figure 3: Monthly Potassium Concentrations by Soil Layer

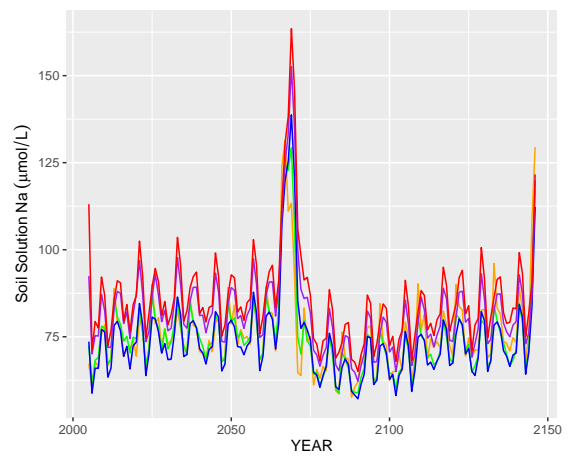
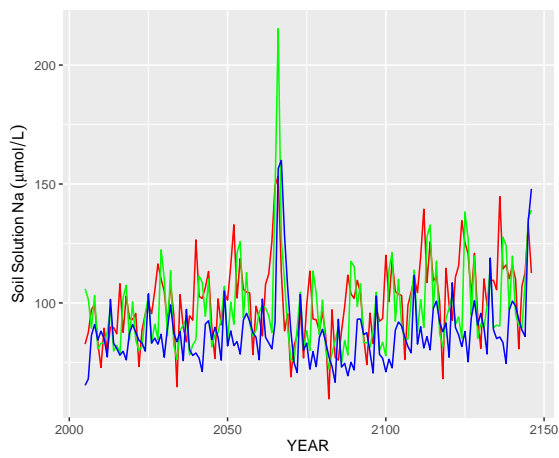


Figure 4: Figure 4: Monthly Sodium Concentrations by Soil Layer

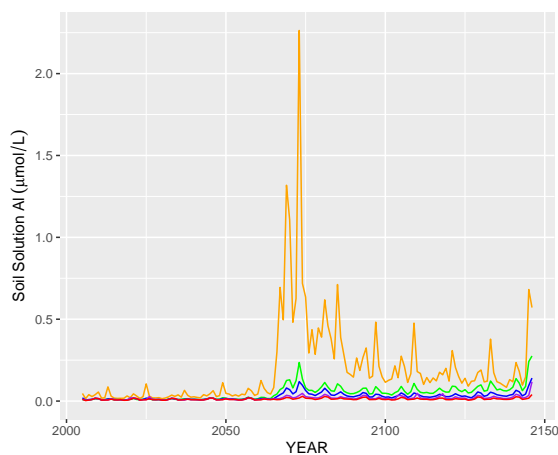
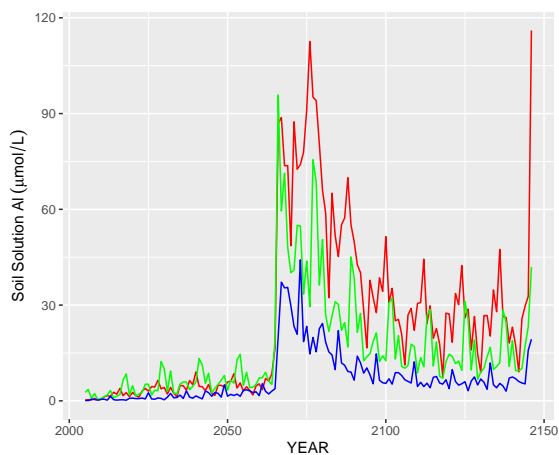


Figure 5: Figure 5: Monthly Aluminum Concentrations by Soil Layer

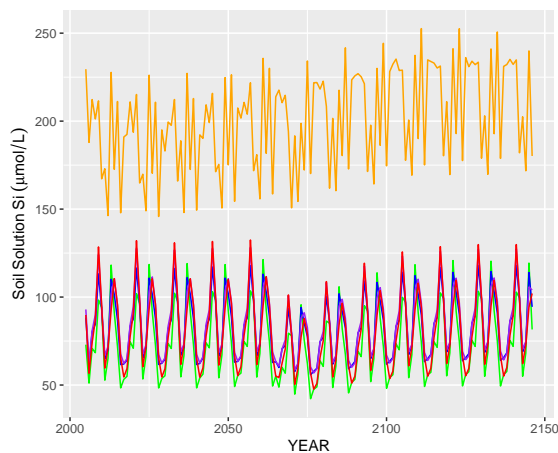
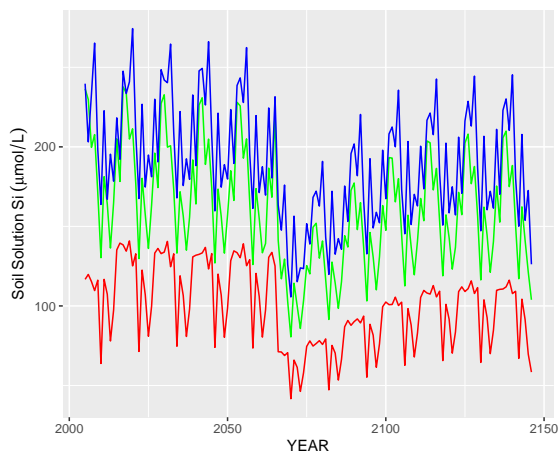


Figure 6: Figure 6: Monthly SiO2 Concentrations by Soil Layer

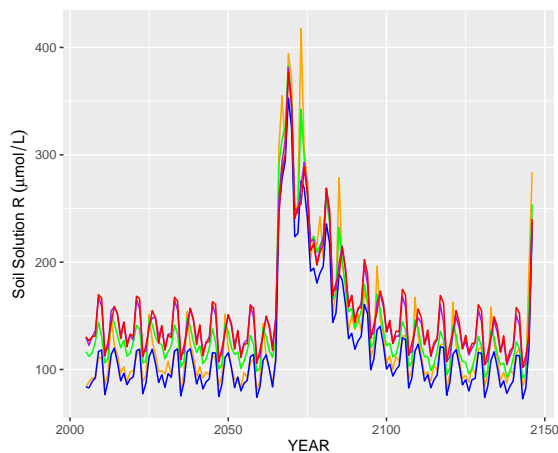
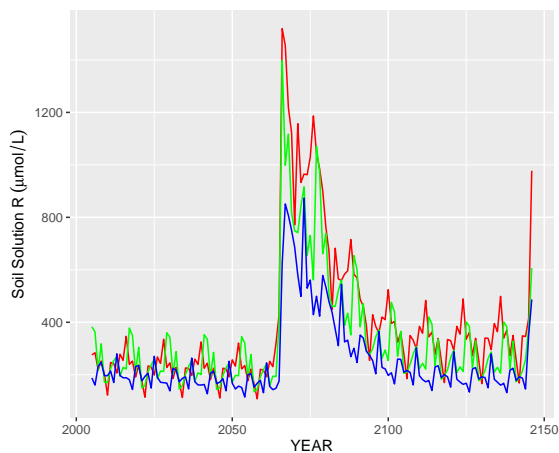


Figure 7: Figure 7: Monthly Organic Acid Base (R-) Concentrations by Soil Layer

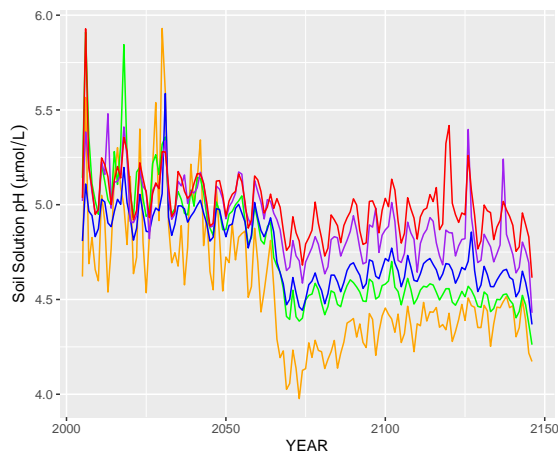
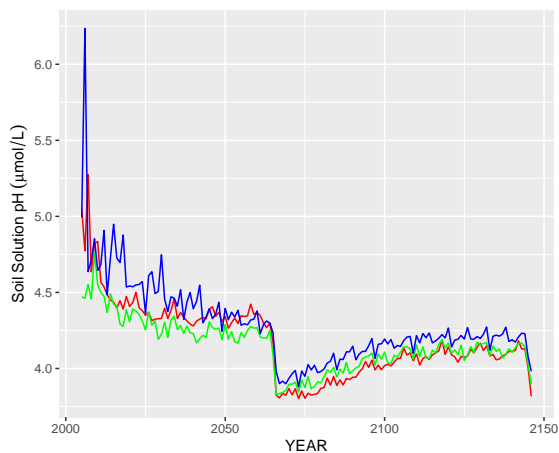


Figure 8: Figure 8: Monthly pH by Soil Layer

Weathering Results

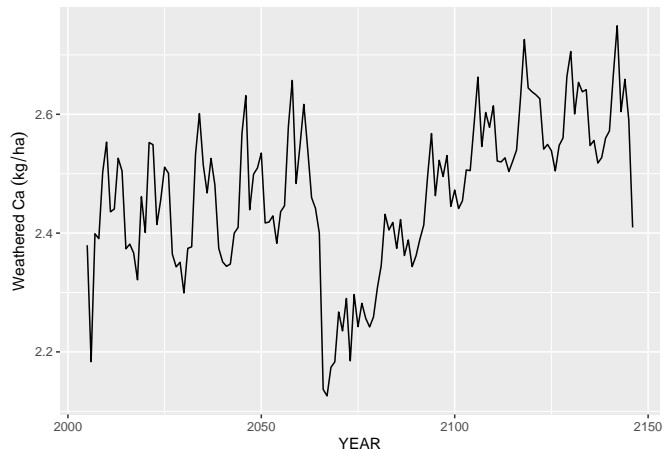
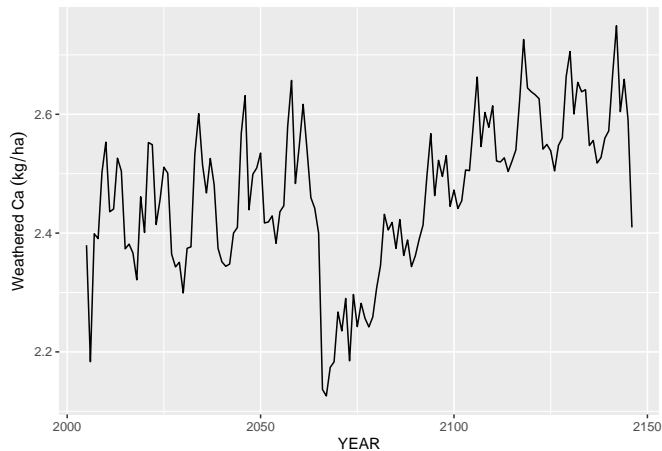


Figure 9: Figure 9: Calcium Weathering by Layer

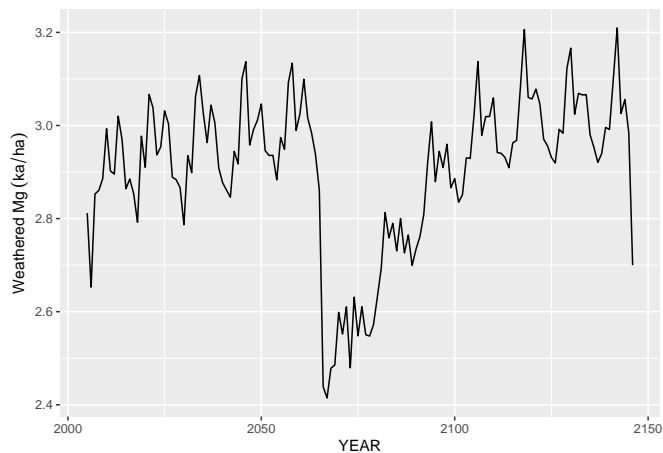
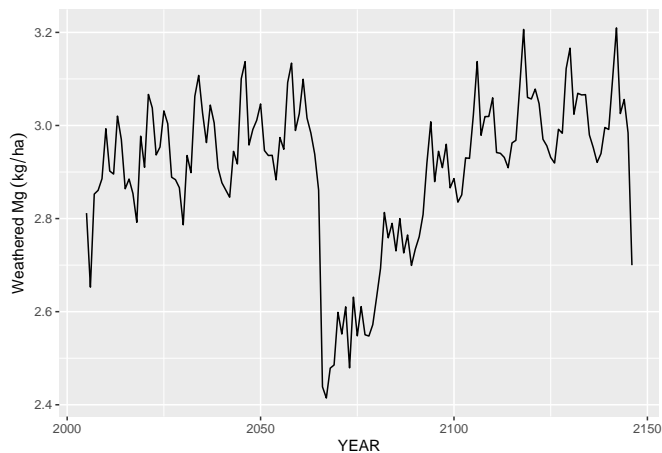


Figure 10: Figure 10: Magnesium Weathering by Layer

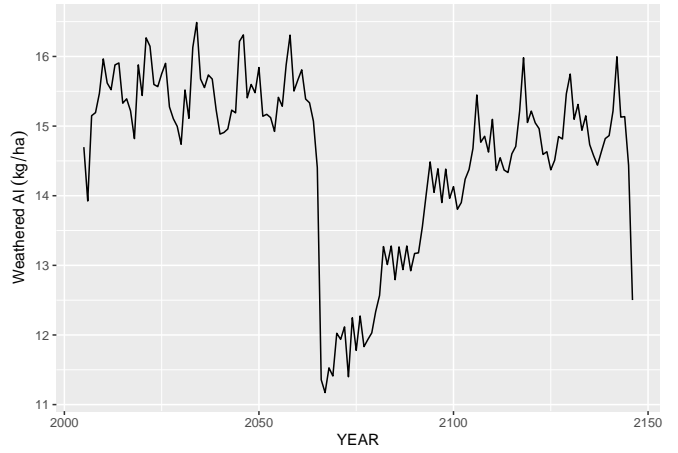
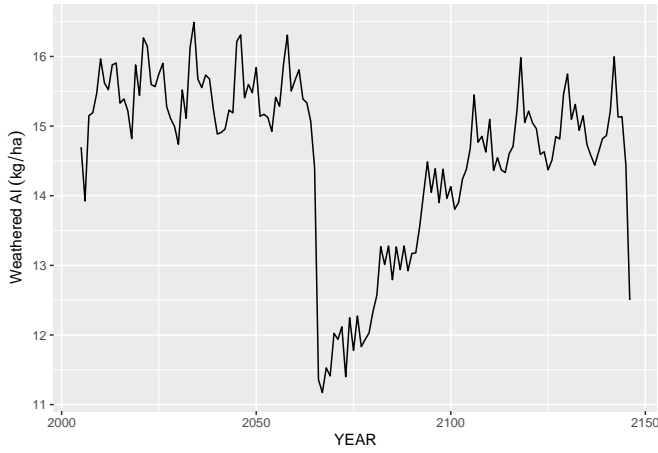


Figure 11: Figure 12: Aluminum Weathering by Layer

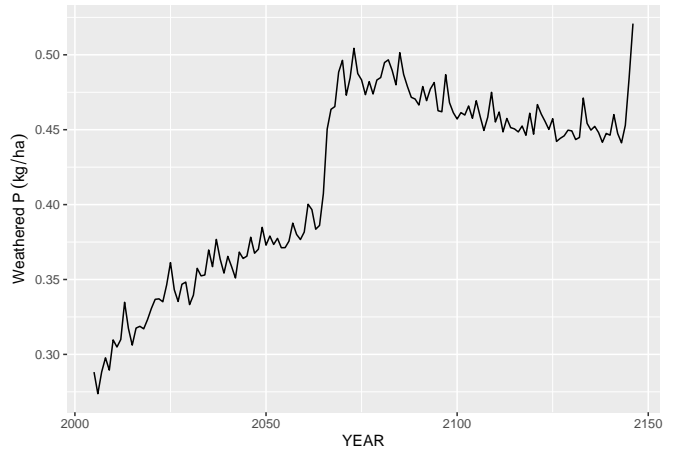
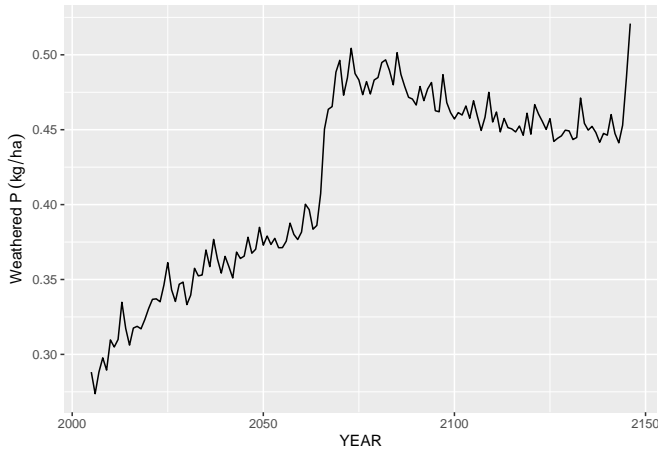


Figure 12: Figure 13: Phosphate Weathering by Layer

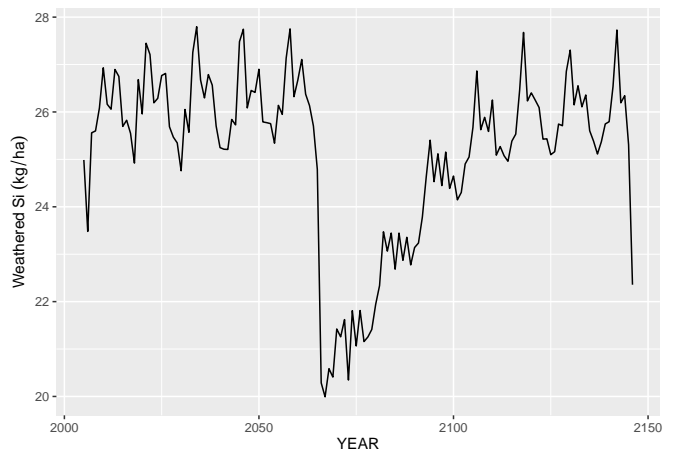
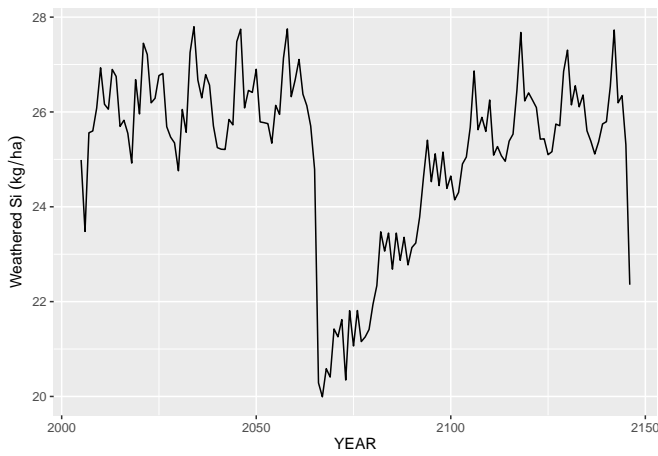


Figure 13: Figure 14: Silica Weathering by Layer

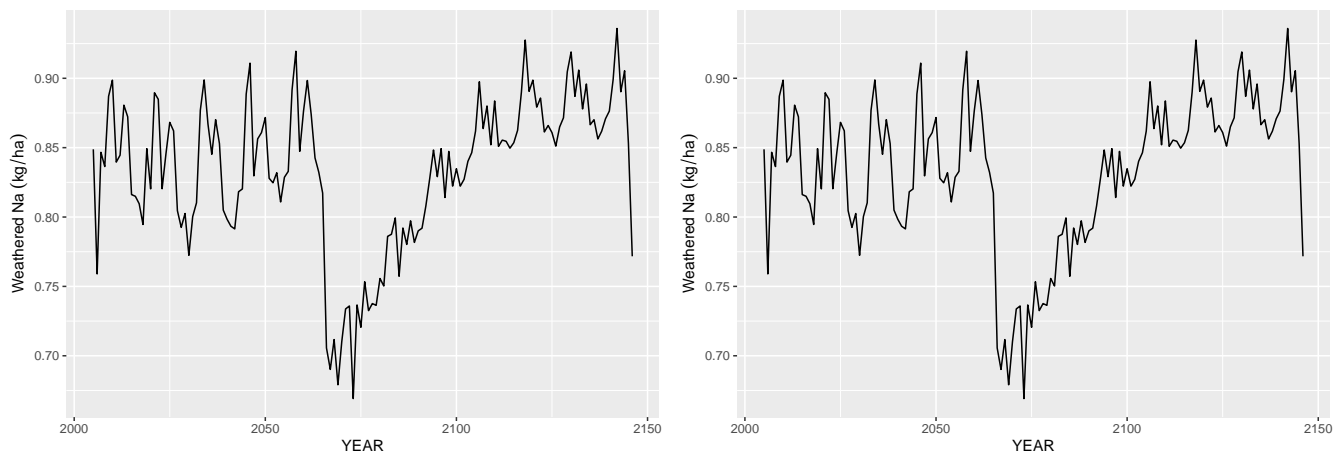


Figure 14: Figure 15: Sodium Weathering by Layer

Figures

Soil Organic Matter (SOM) Results

Litter Pool Results

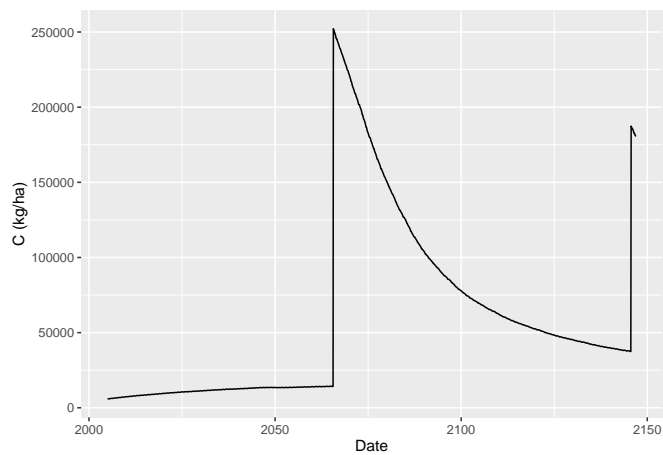


Figure 15: Figure 17: Litter Pool Carbon Content Over Simulation Period

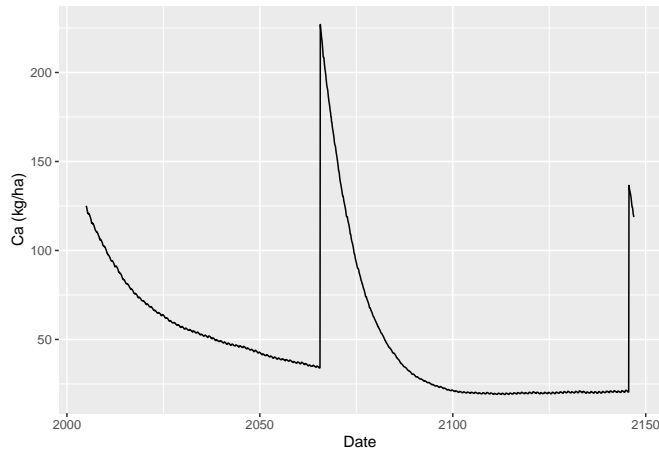


Figure 16: Figure 18: Litter Pool Ca Content Over Simulation Period

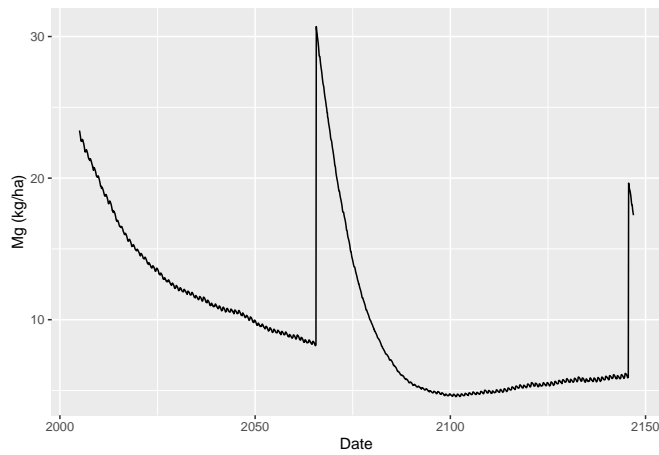


Figure 17: Figure 19: Litter Pool Mg Content Over Simulation Period

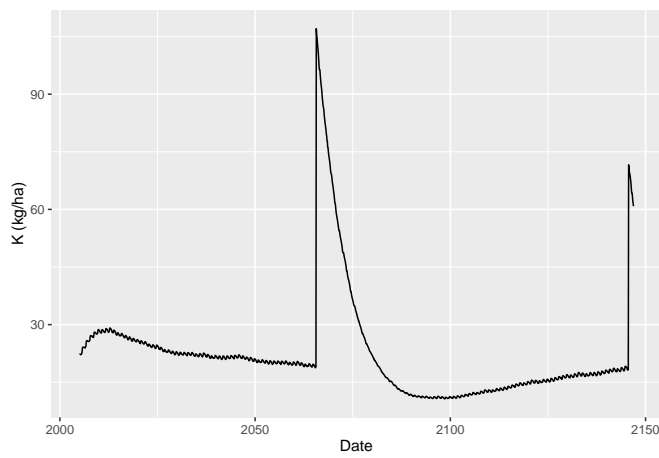


Figure 18: Figure 20: Litter Pool K Content Over Simulation Period

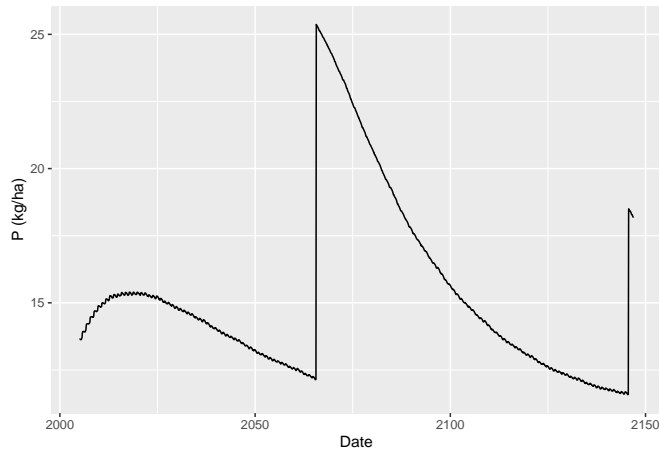


Figure 19: Figure 21: Litter Pool P Content Over Simulation Period

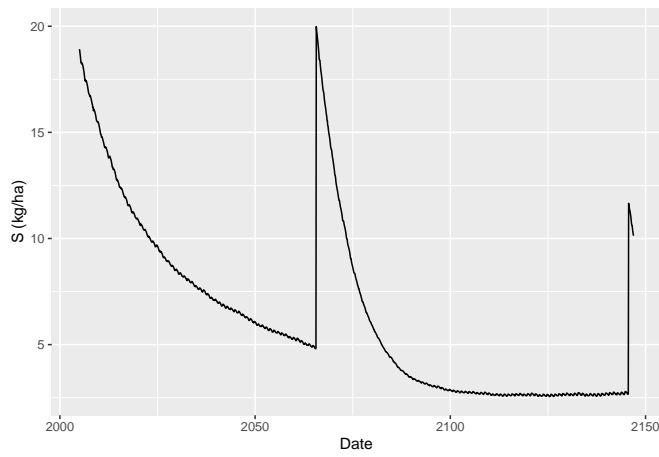


Figure 20: Figure 22: Litter Pool S Content Over Simulation Period

Tree Nutrient Content

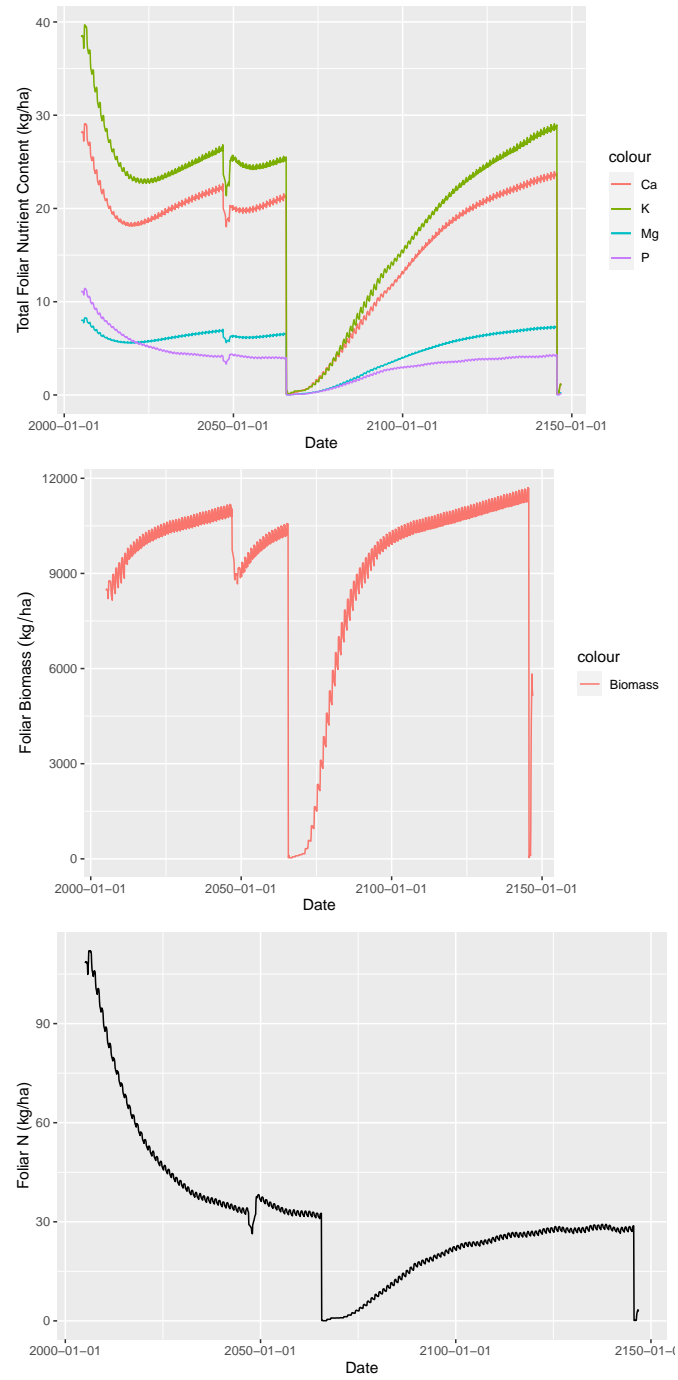


Figure 21: Figure 23: Tree Nutrient Content (kg/ha) in the Foliage

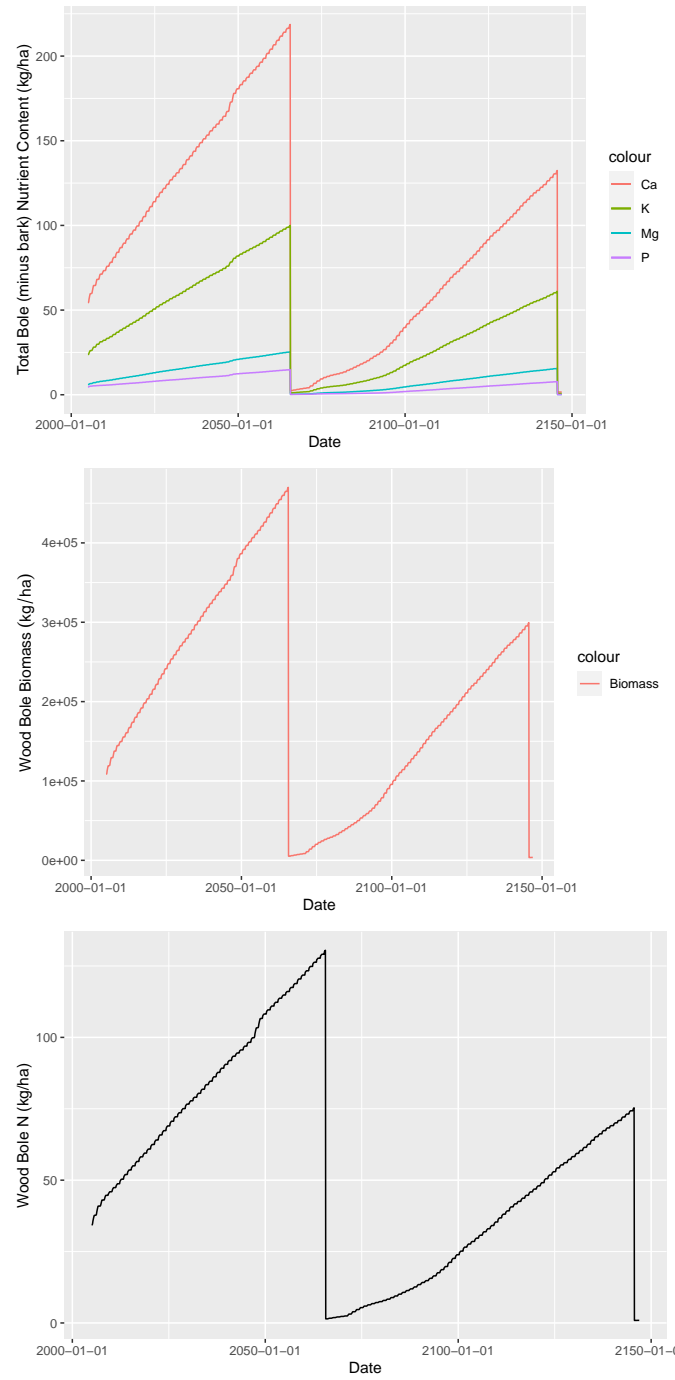


Figure 22: Figure 24: Tree Nutrient Content (kg/ha) in the Bole. Excludes Bark

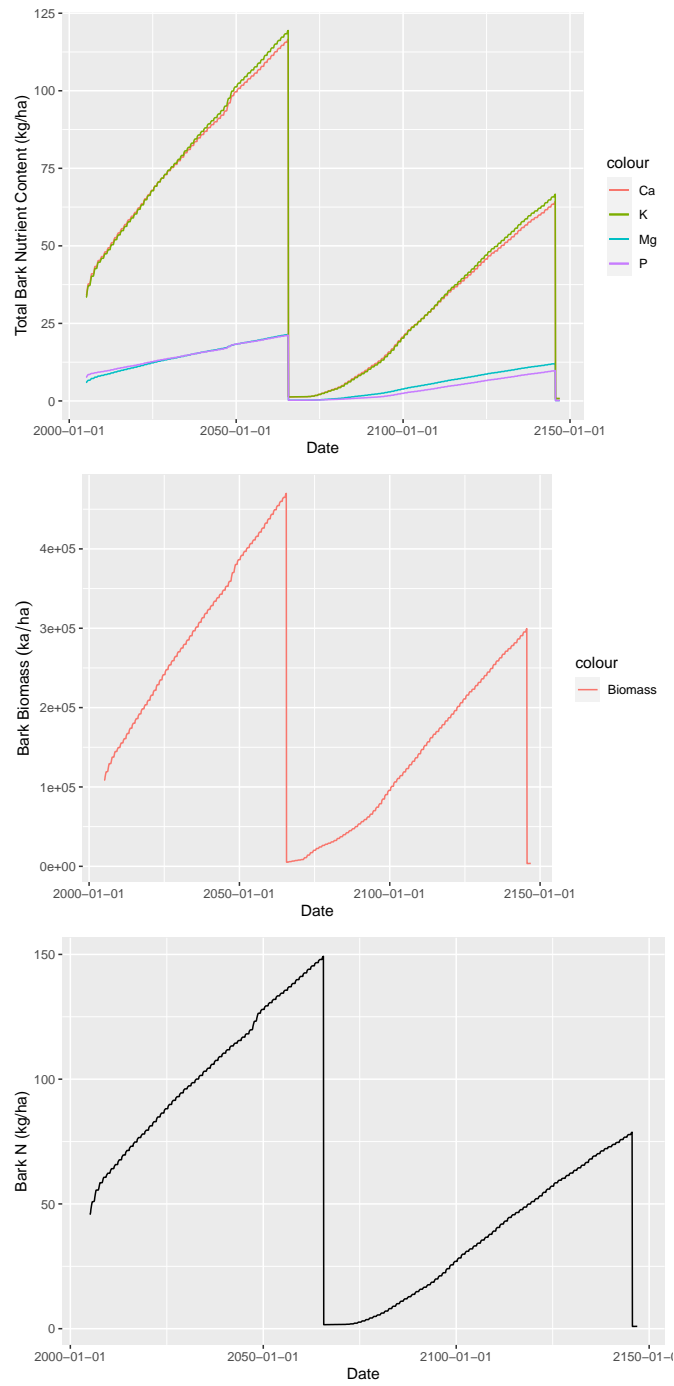


Figure 23: Figure 25: Tree Nutrient Content (kg/ha) in the Bark

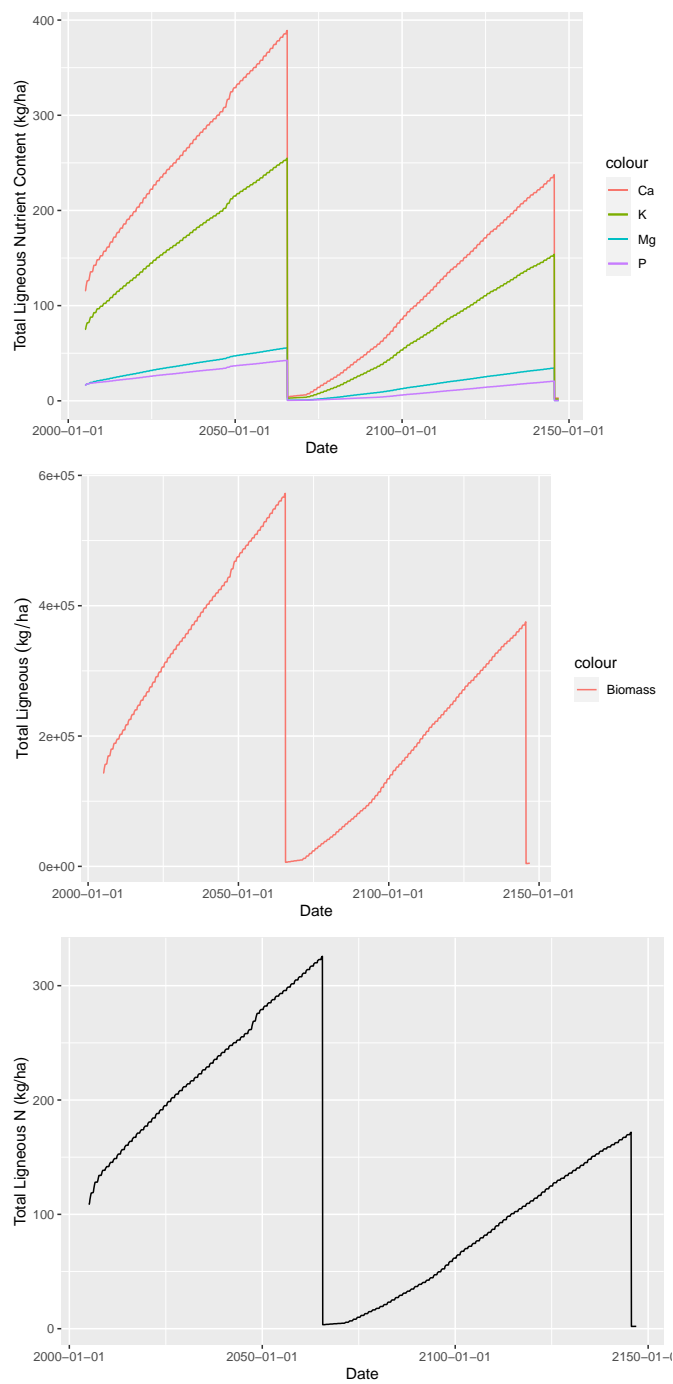


Figure 24: Figure 26: Tree Nutrient Content and Biomass (kg/ha) in all Ligneous Material

Cation Exchange Capacity

Not yet complete

Anion Exchange Capacity

Not yet complete

Leaching Losses

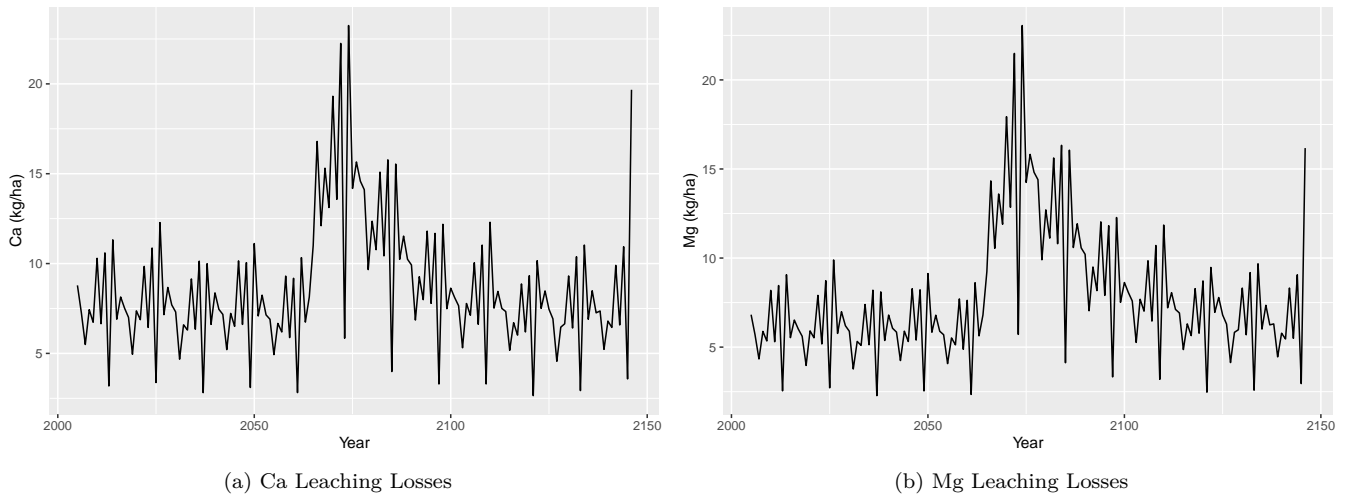


Figure 25: Annual Leaching Losses of Divalent Base Cations

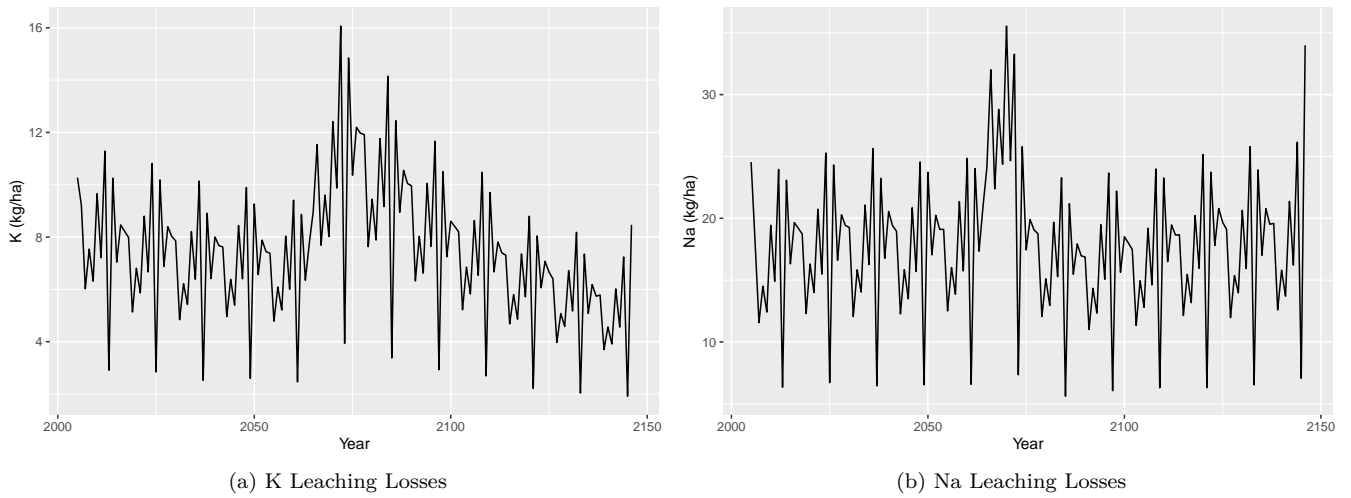


Figure 26: Annual Leaching Losses of Monovalent Base Cations

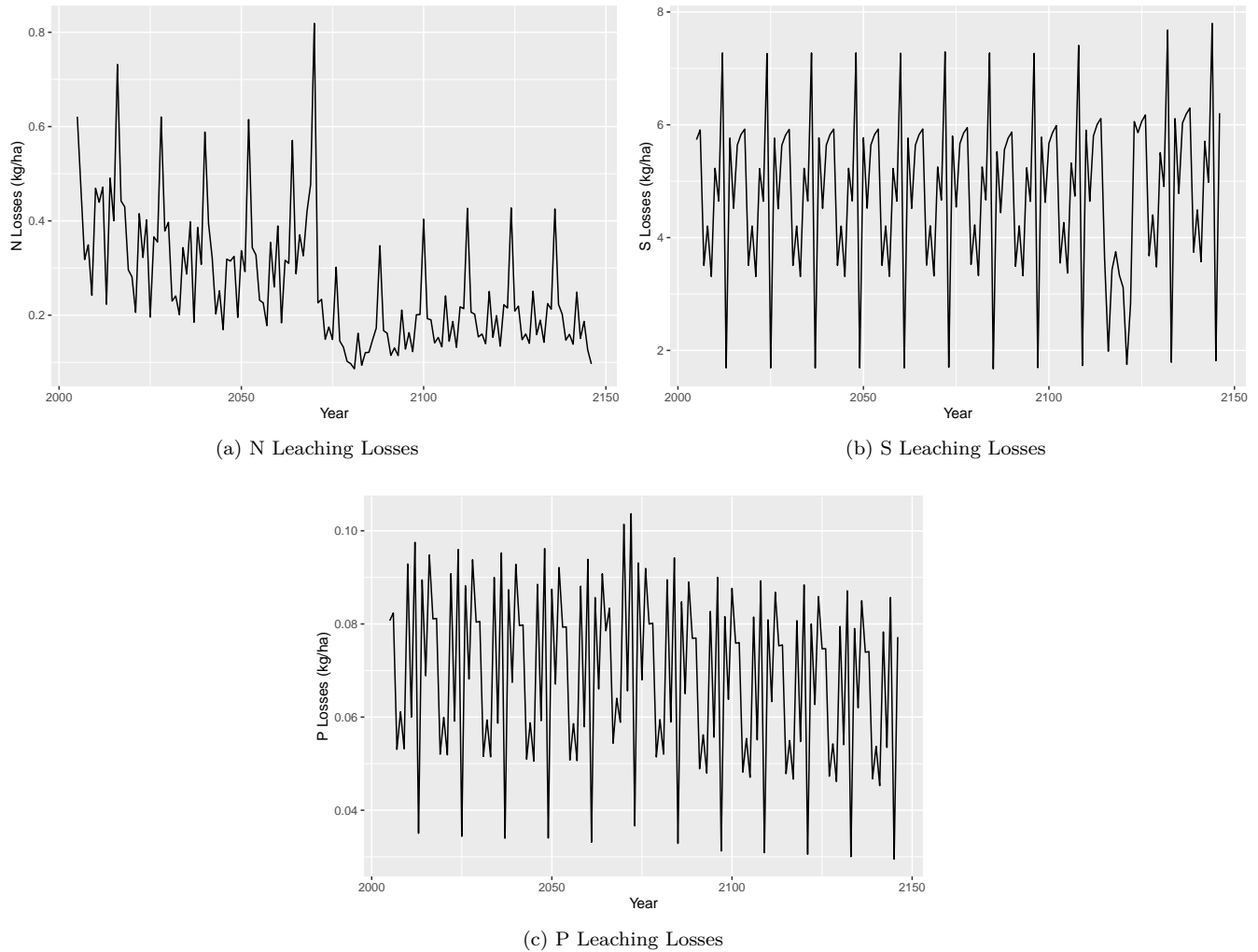


Figure 27: Annual Leaching Losses of N, P, and S

Not yet complete

Analysis 1

Nutrient depletion as a condition is being analyzed using the following metric:

(Uptake Rate (neg SOM Mineralization) + Leaching Loss Rate + Net Uptake) = Ecosystem Output Rate

Atmospheric Deposition Rate + Mineral Weathering Rate + Foliar Leaching (K only) = Input Rate

Graph rate of

Input-Output = Net nutrient gain Rate (- is loss, + is gain) vs. Biomass Acquisition of each compartment

Analysis 2

Percent biomass reduction from 1st harvest (Biomass at Current Harvest/Biomass achieved 1st harvest)*100= % Reduction/month

Biomass of