Calibration Report: Low N Sedimentary Site

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Contents

Soil Solution Results

Table 1: Average Soil Solution Concentrations of Reliable Months (2005-2006)

	$\\mu$mol/L															
Soil Layer	Ca	Mg	K	Na	NO3	NH4	SO4	Cl	PO4	DOC	Al	Si	H+	pH	R	HR
Layer 1	19.6	25.8	20.4	49.7	2.450	2.511	24.4	48.6	1.104	402	0.36224	12.7	27.07	4.57	91.5	42.6
Layer 2	25.5	34.8	23.7	62.4	1.577	1.309	25.4	59.0	0.997	639	0.80495	27.3	38.31	4.42	137.2	75.7
Layer 3	34.7	40.9	27.3	59.2	1.239	0.994	25.4	66.4	0.881	698	0.56573	40.0	32.24	4.49	154.0	78.8
Layer 4	13.8	24.0	17.9	56.6	0.777	0.987	13.0	57.3	0.475	425	0.05135	49.5	27.80	4.56	95.2	46.6
Layer 5	18.7	30.7	17.9	60.1	0.702	1.799	12.7	65.5	0.242	424	0.01501	51.3	15.38	4.81	102.3	39.0
Layer 6	17.4	27.8	20.4	63.0	0.682	2.039	12.7	72.2	0.319	386	0.01476	54.9	15.64	4.81	93.4	35.4
Layer 7	22.3	30.4	19.1	70.4	0.691	2.826	12.8	78.8	0.333	430	0.01183	59.3	13.06	4.88	106.1	37.2
Layer 8	22.1	28.4	21.8	78.1	0.701	3.344	12.7	78.0	0.267	426	0.00758	61.5	9.65	5.02	109.6	32.6

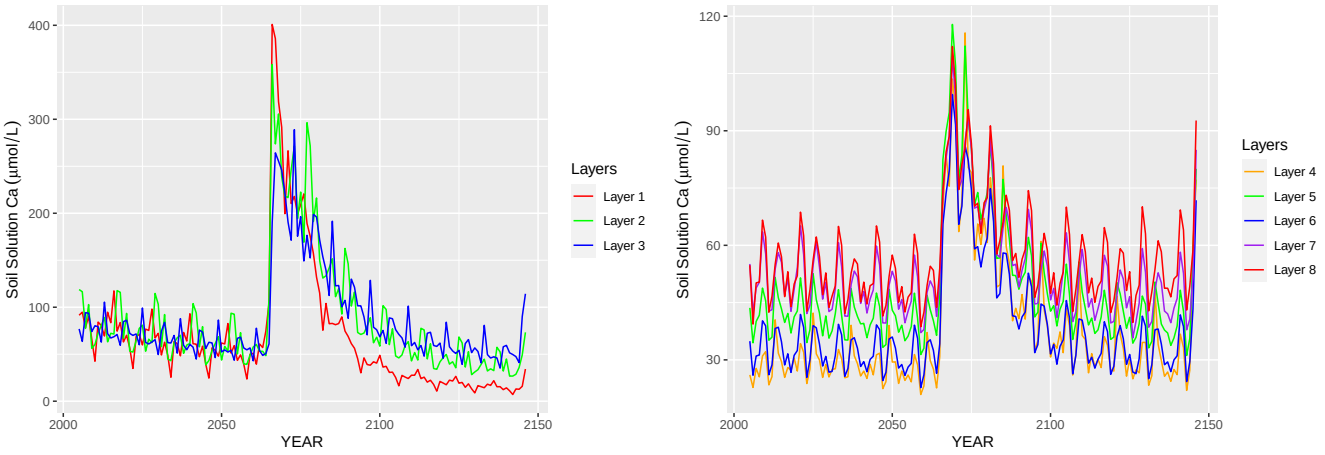


Figure 1: Figure 1: Monthly Calcium Concentrations by Soil Layer

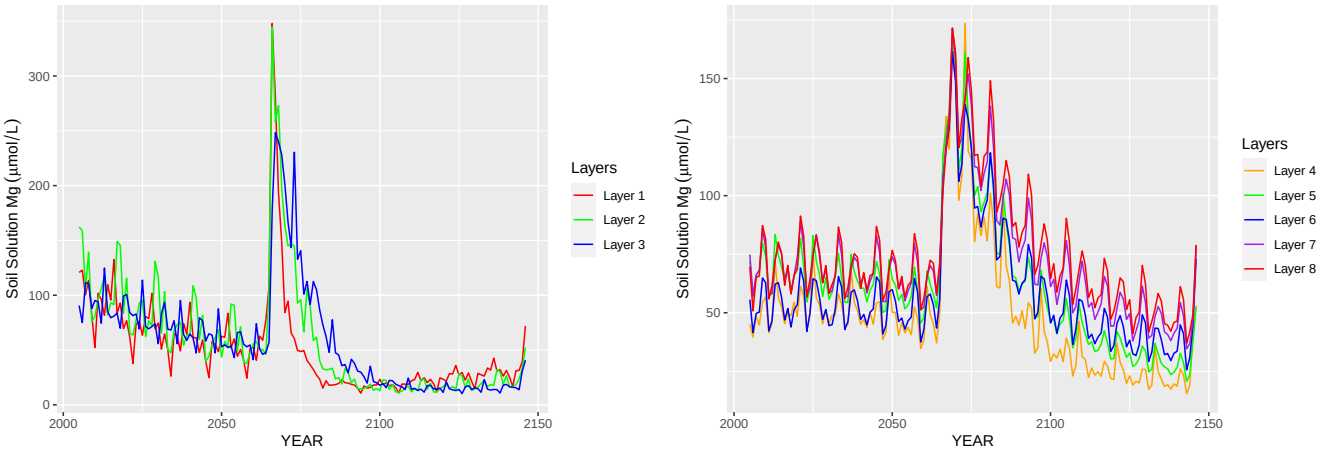


Figure 2: Figure 2: Monthly Magnesium Concentrations by Soil Layer

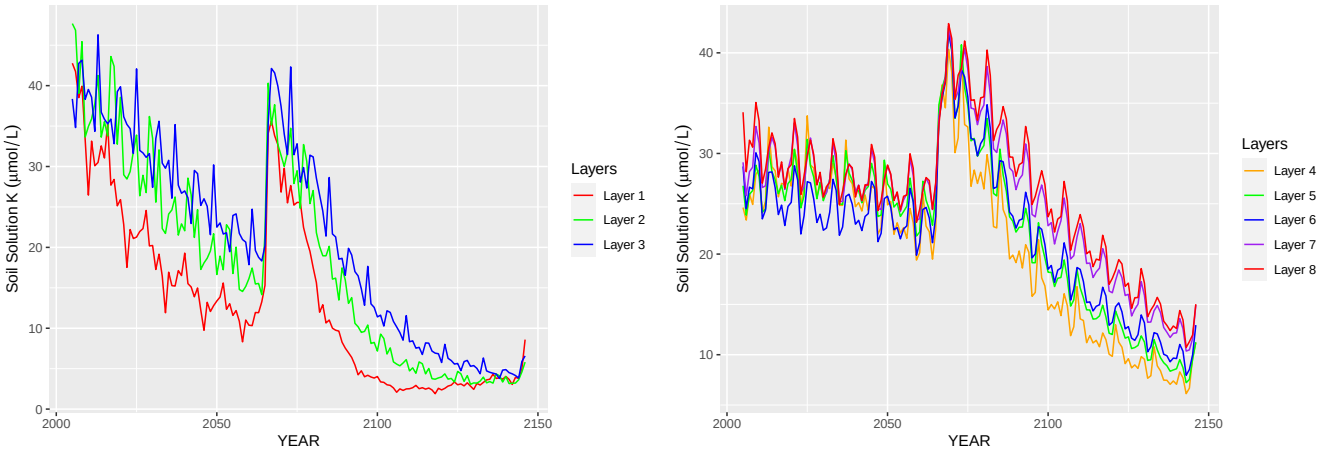


Figure 3: Figure 3: Monthly Potassium Concentrations by Soil Layer

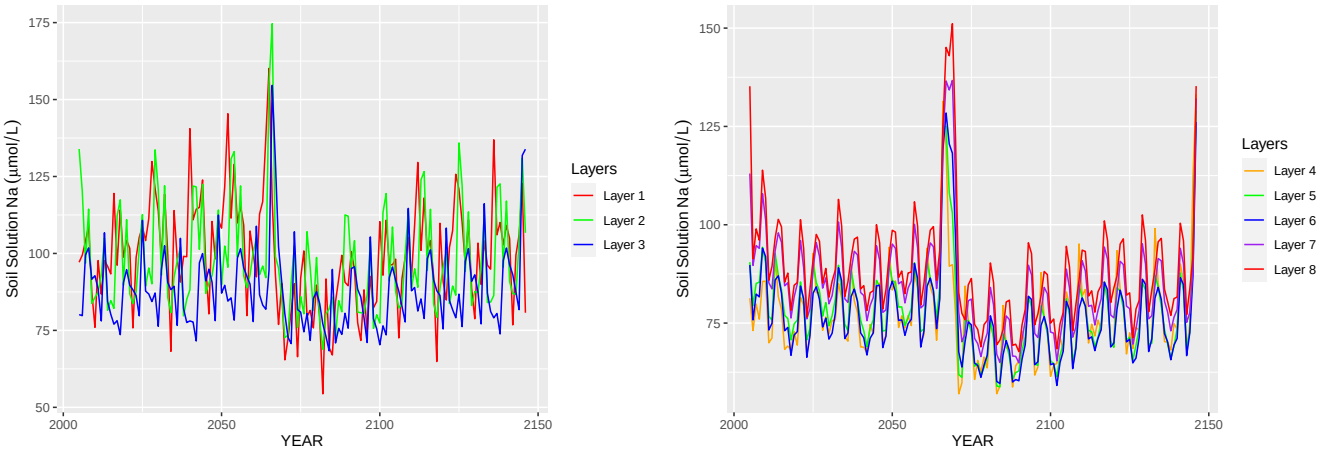


Figure 4: Figure 4: Monthly Sodium Concentrations by Soil Layer

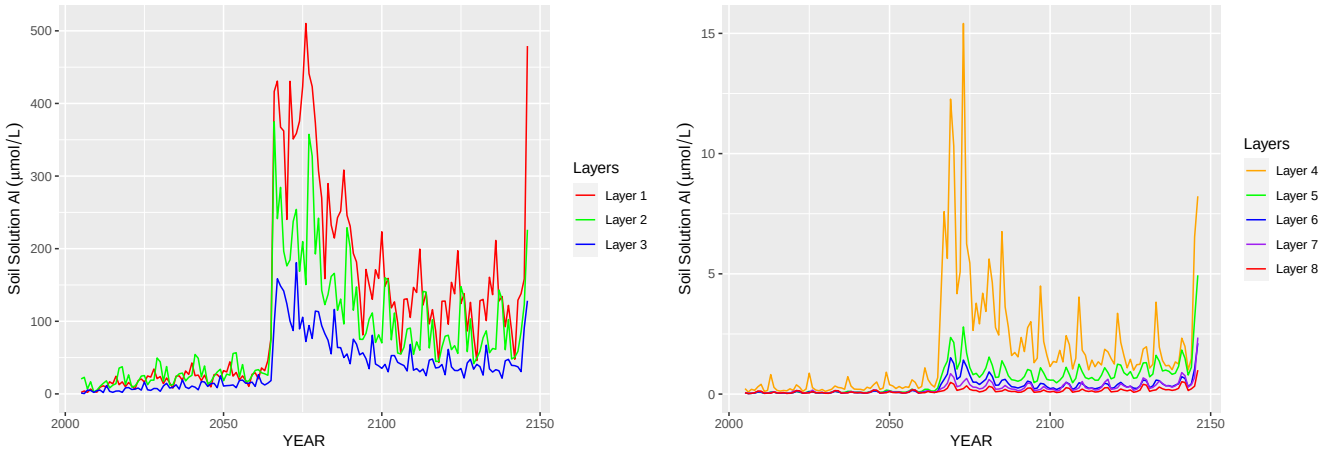


Figure 5: Figure 5: Monthly Aluminum Concentrations by Soil Layer

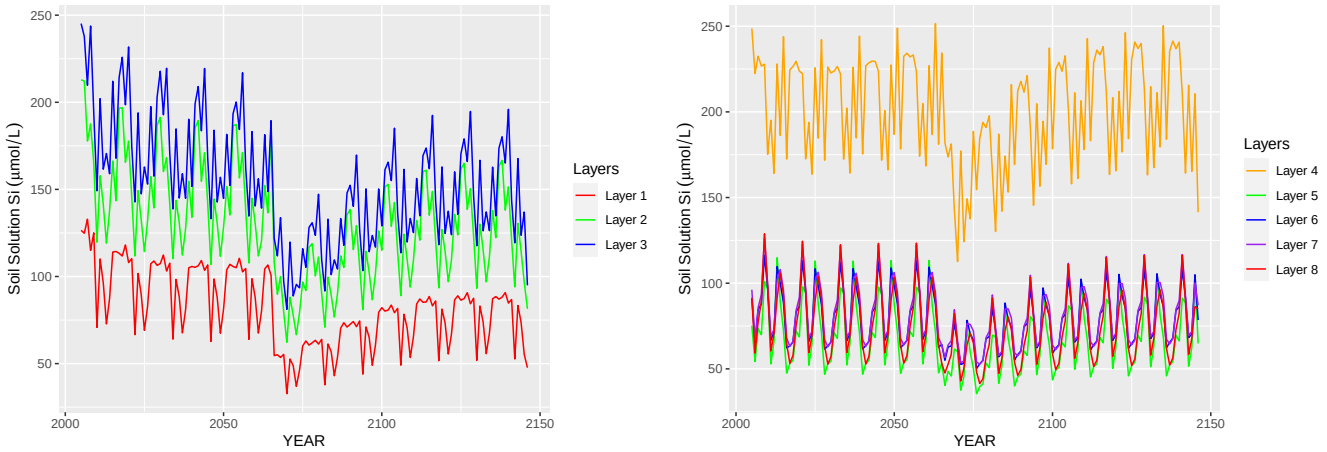


Figure 6: Figure 6: Monthly SiO2 Concentrations by Soil Layer

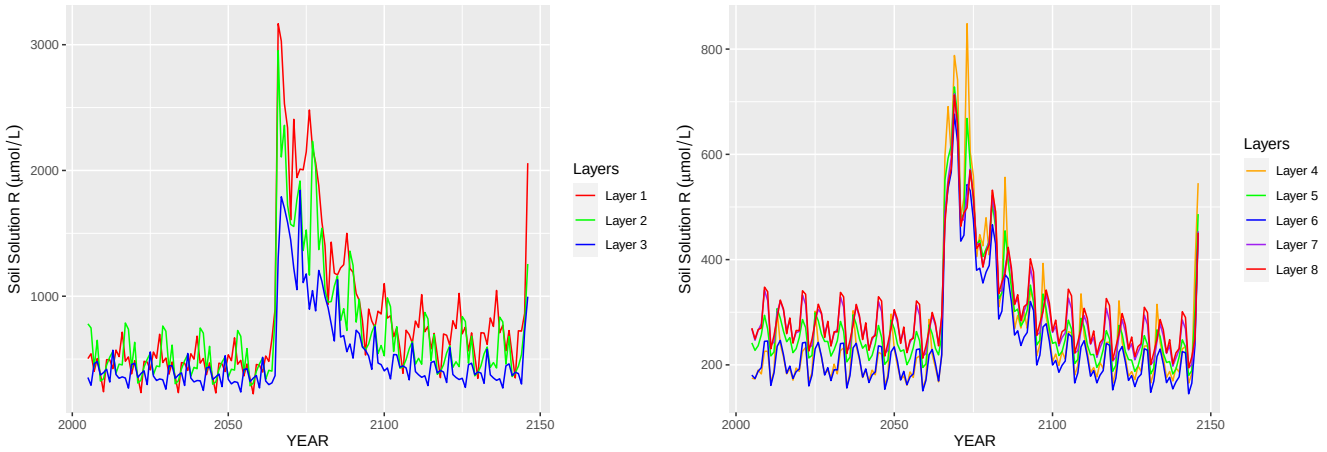


Figure 7: Figure 7: Monthly Organic Acid Base (R-) Concentrations by Soil Layer

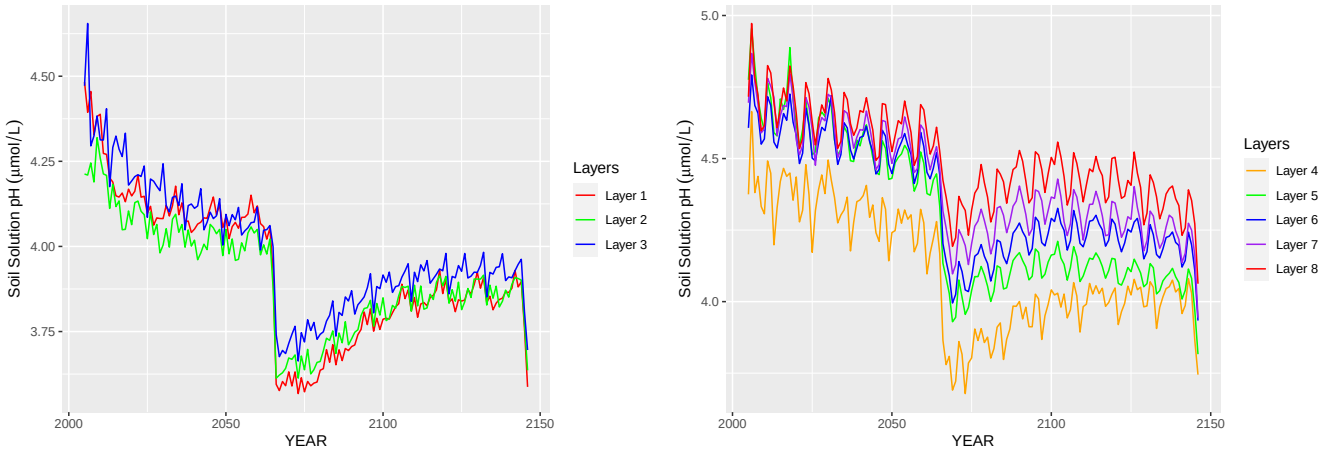


Figure 8: Figure 8: Monthly pH by Soil Layer

Weathering Results

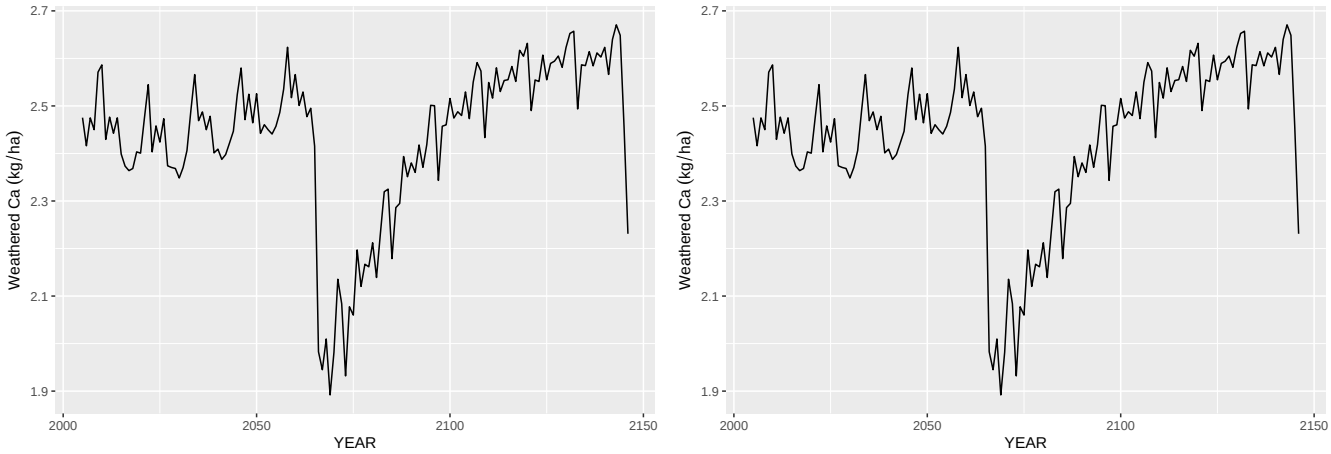


Figure 9: Figure 9: Calcium Weathering by Layer

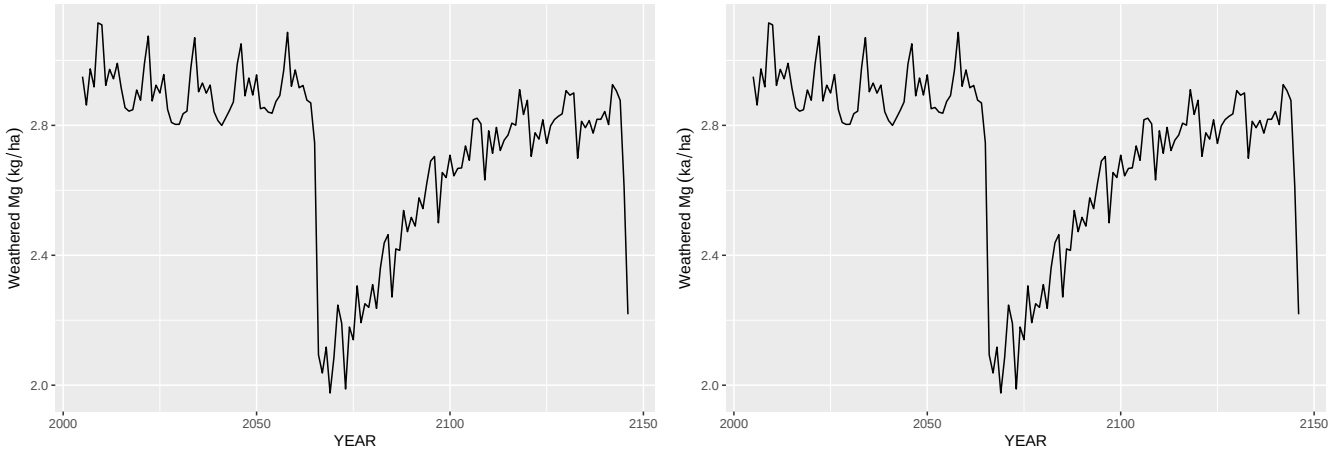


Figure 10: Figure 10: Magnesium Weathering by Layer

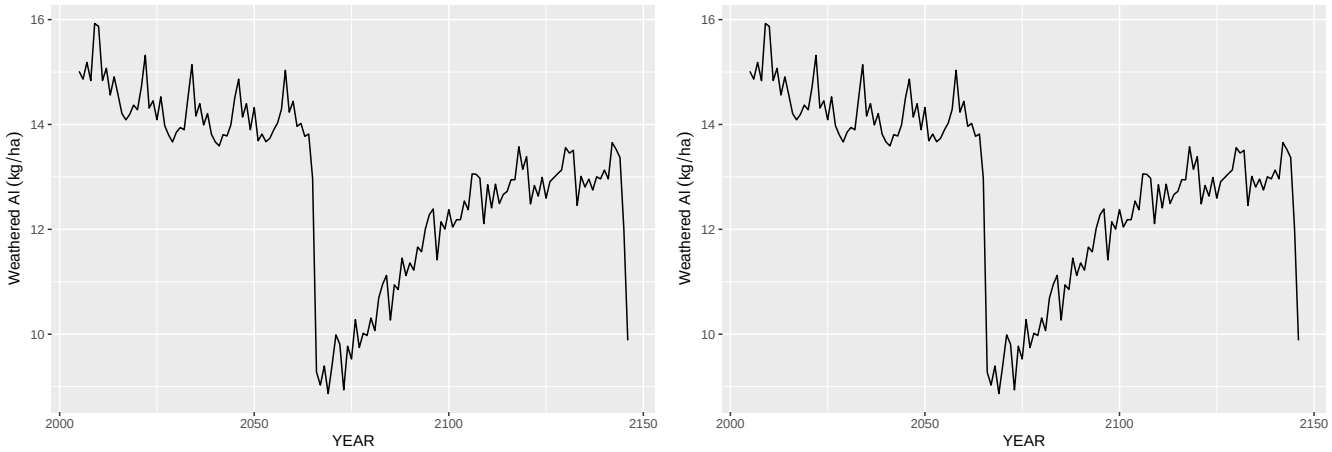


Figure 11: Figure 12: Aluminum Weathering by Layer

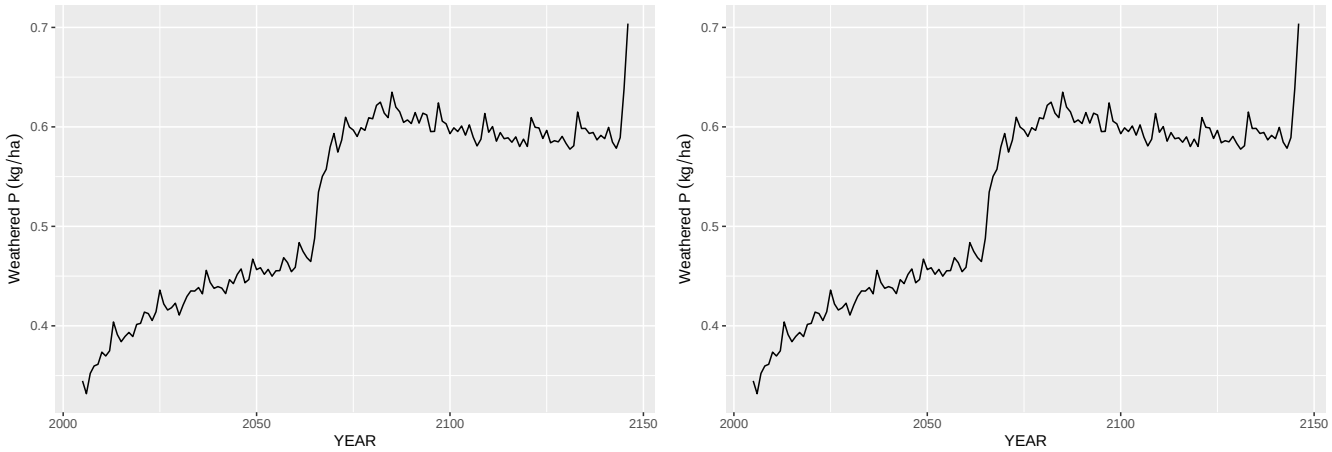


Figure 12: Figure 13: Phosphate Weathering by Layer

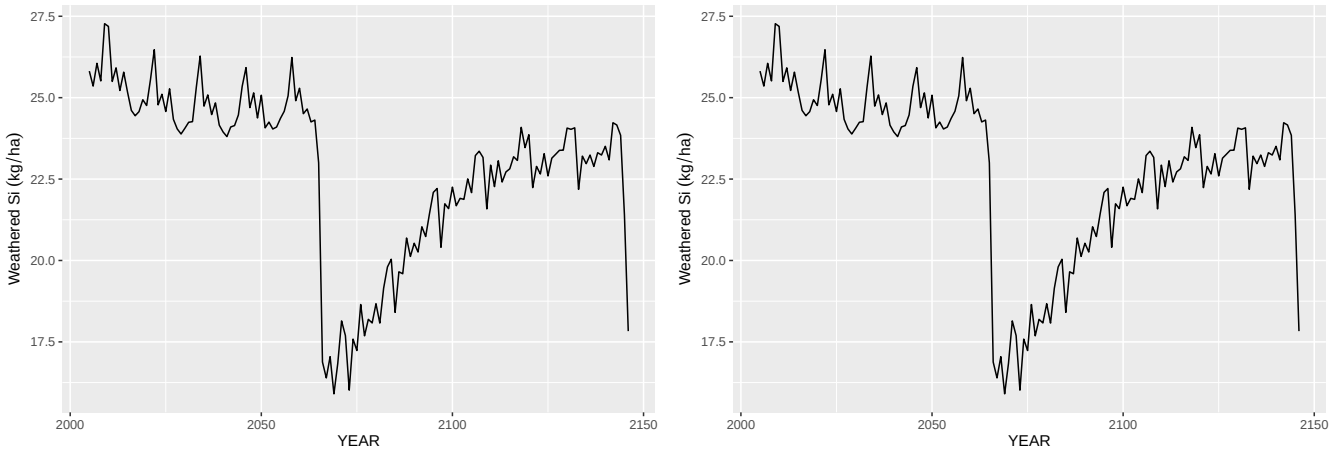


Figure 13: Figure 14: Silica Weathering by Layer

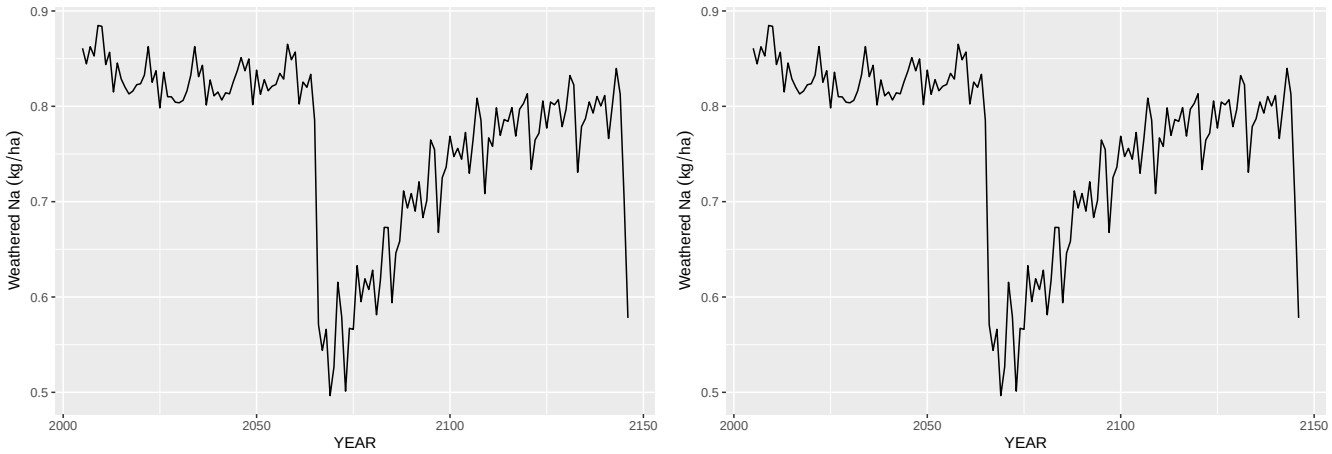


Figure 14: Figure 15: Sodium Weathering by Layer

Figures

Soil Organic Matter (SOM) Results

Litter Pool Results

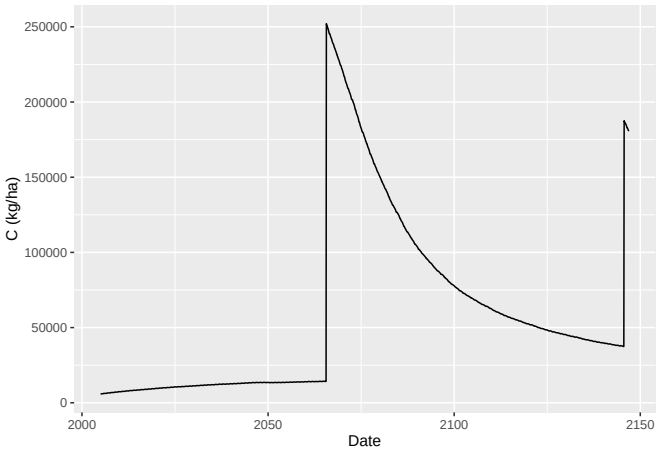


Figure 15: Figure 17: Litter Pool Carbon Content Over Simulation Period

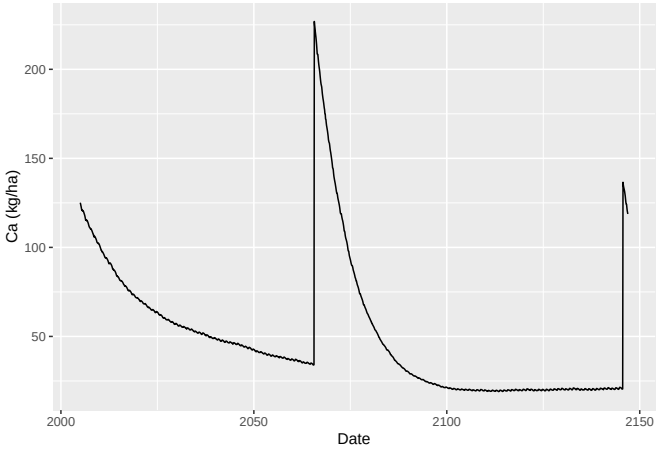


Figure 16: Figure 18: Litter Pool Ca Content Over Simulation Period

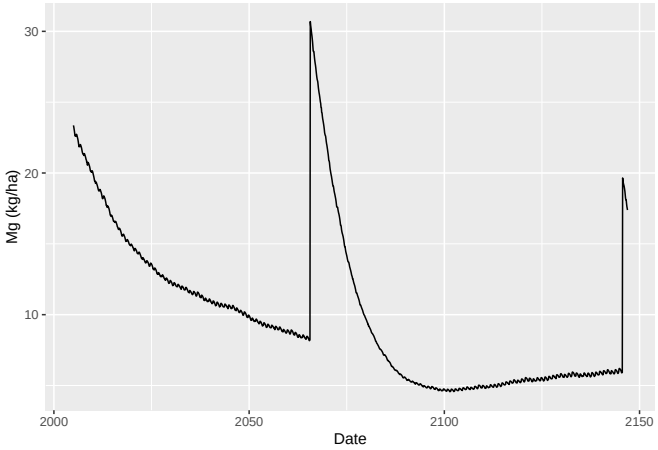


Figure 17: Figure 19: Litter Pool Mg Content Over Simulation Period

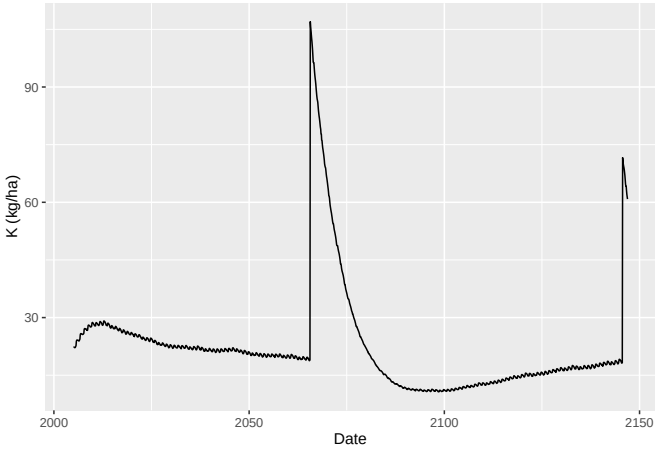


Figure 18: Figure 20: Litter Pool K Content Over Simulation Period

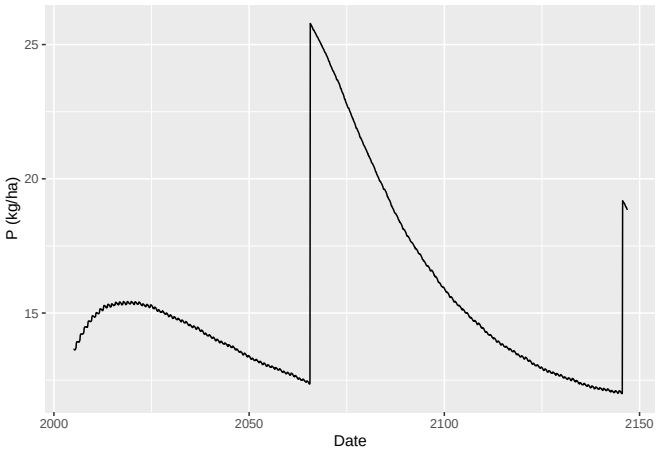


Figure 19: Figure 21: Litter Pool P Content Over Simulation Period

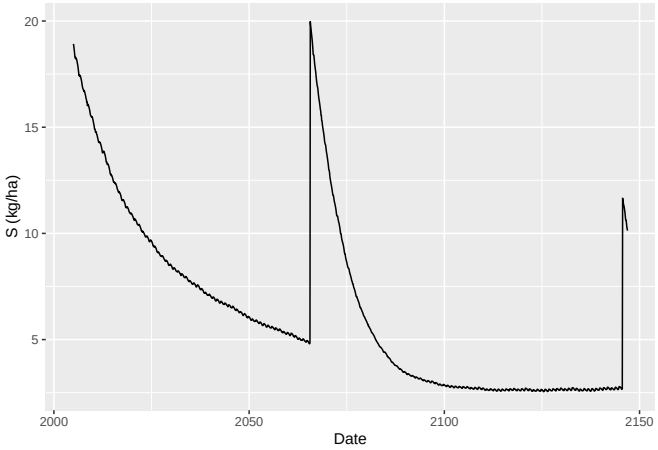


Figure 20: Figure 22: Litter Pool S Content Over Simulation Period

Tree Nutrient Content

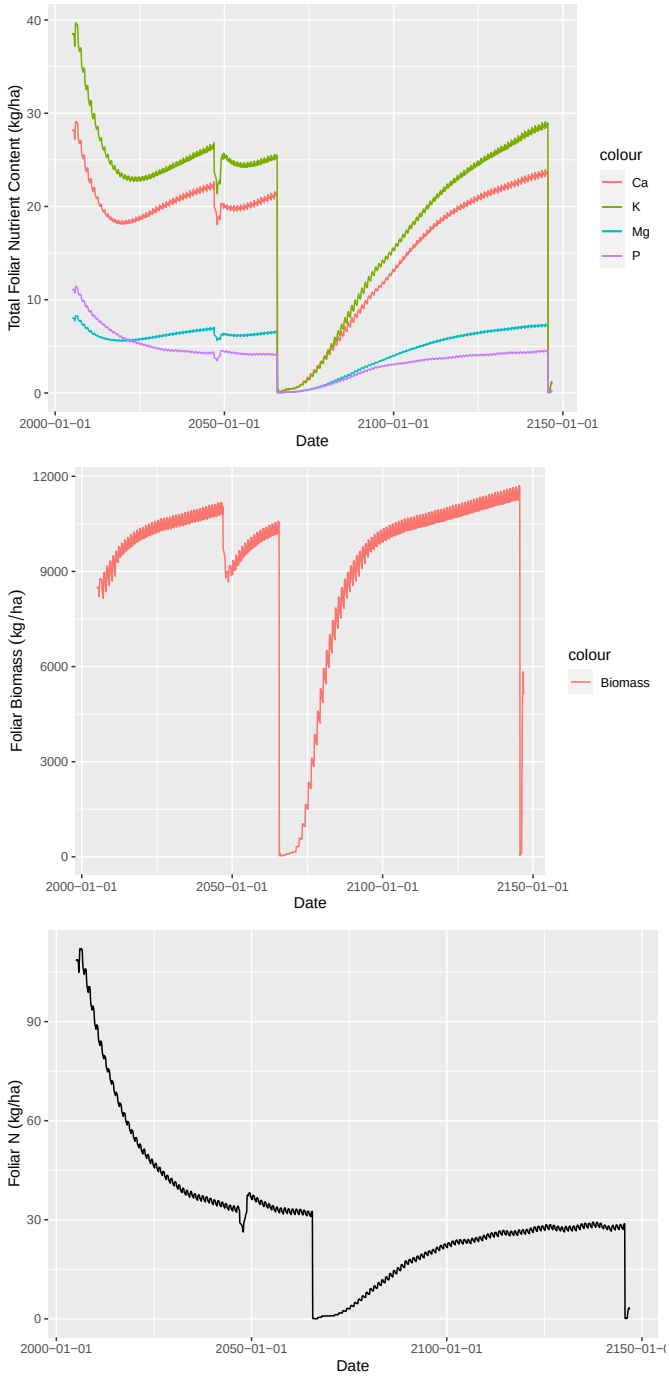


Figure 21: Figure 23: Tree Nutrient Content (kg/ha) in the Foliage

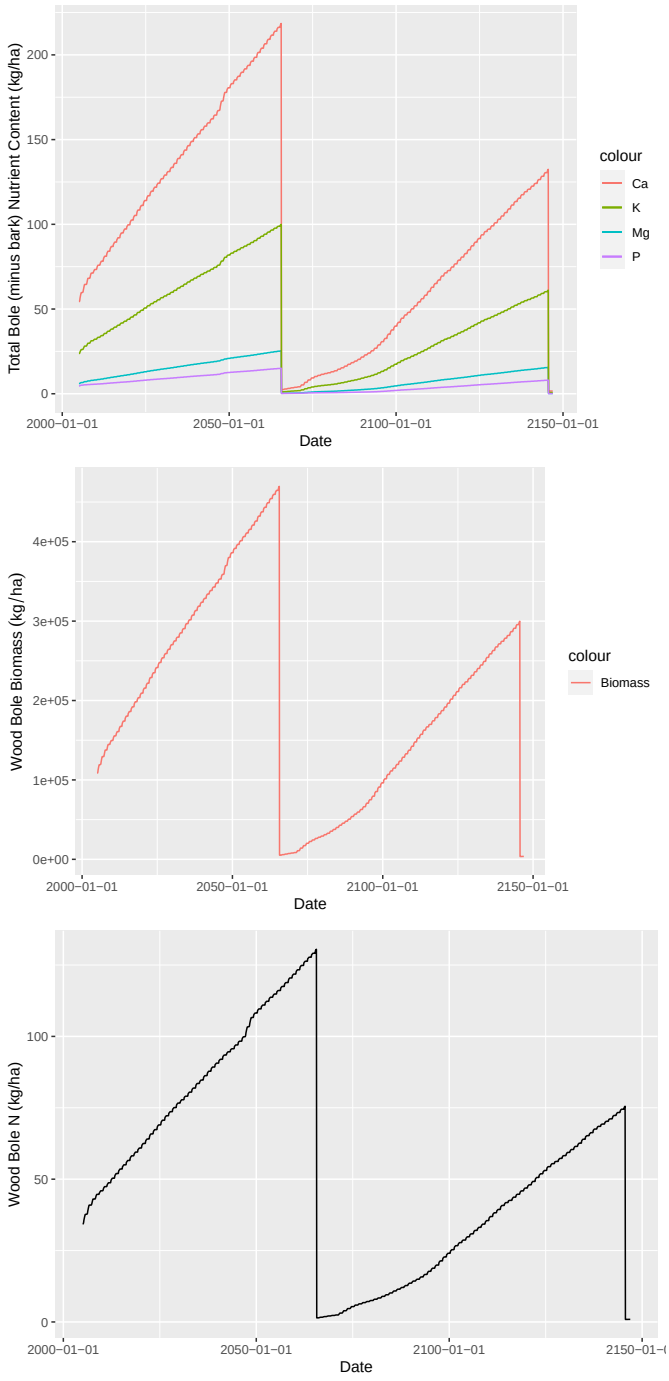


Figure 22: Figure 24: Tree Nutrient Content (kg/ha) in the Bole. Exlcudes Bark

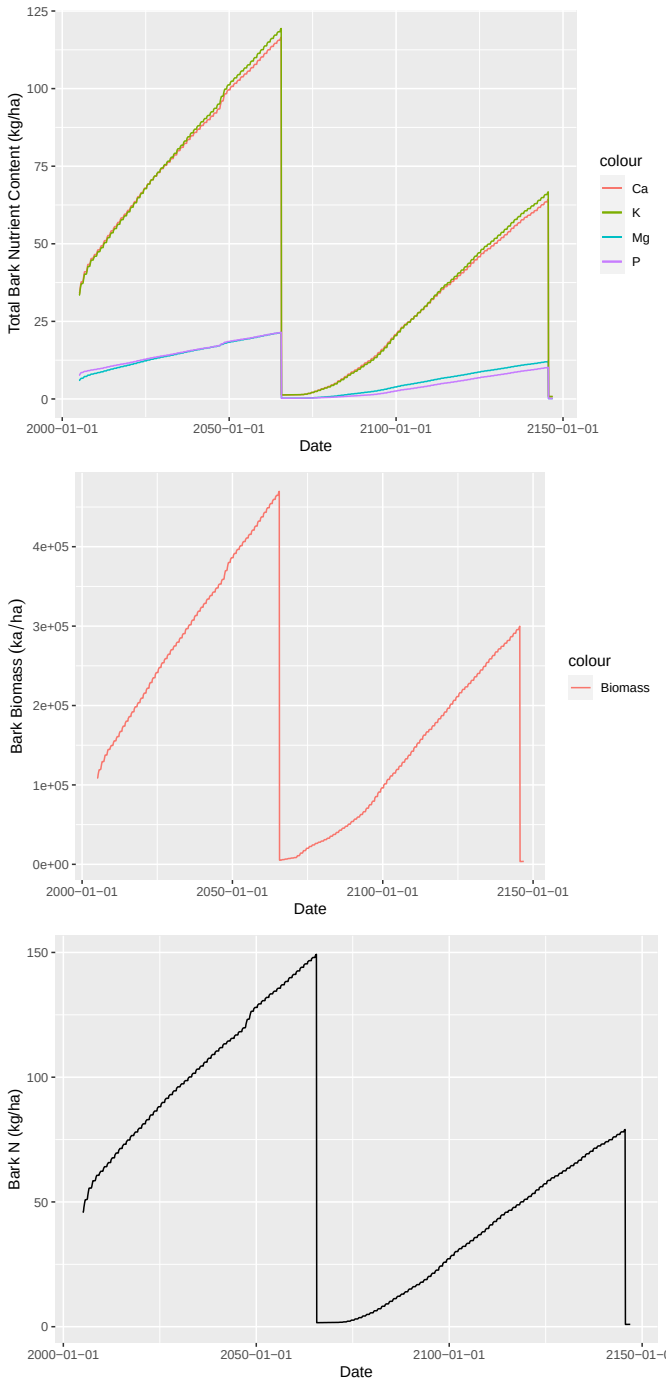


Figure 23: Figure 25: Tree Nutrient Content (kg/ha) in the Bark

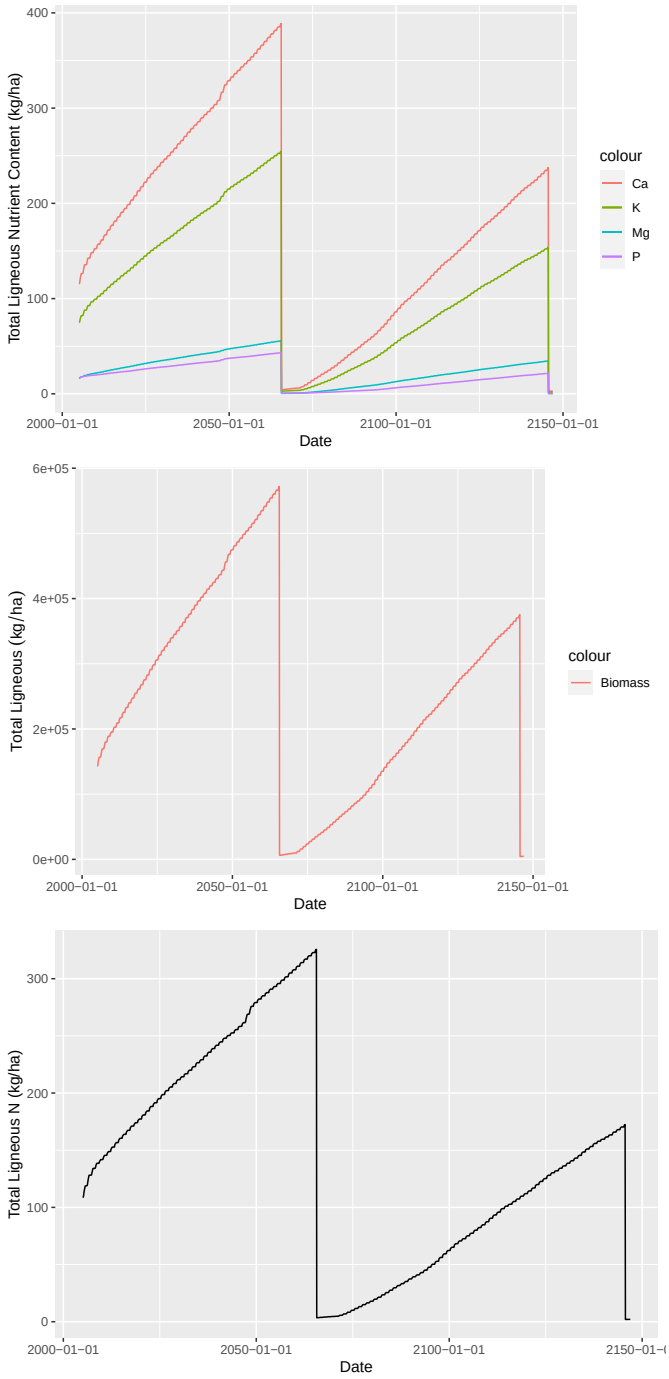


Figure 24: Figure 26: Tree Nutrient Content and Biomass (kg/ha) in all Ligneous Material

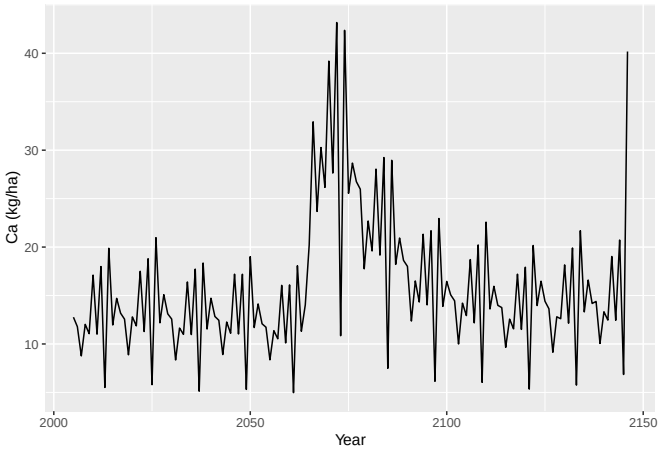
Cation Exchange Capacity

Not yet complete

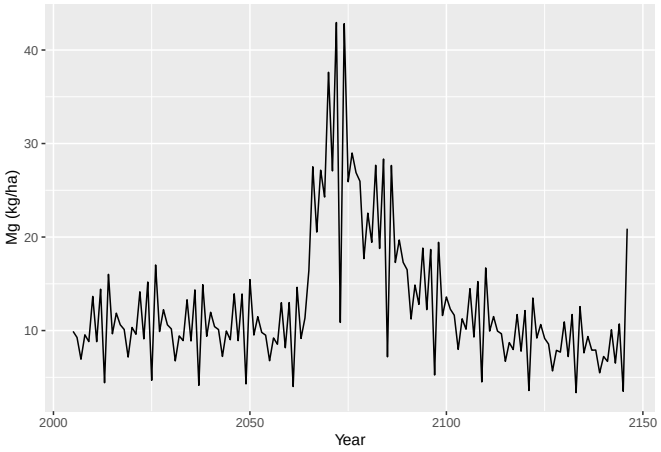
Anion Exchange Capacity

Not yet complete

Leaching Losses

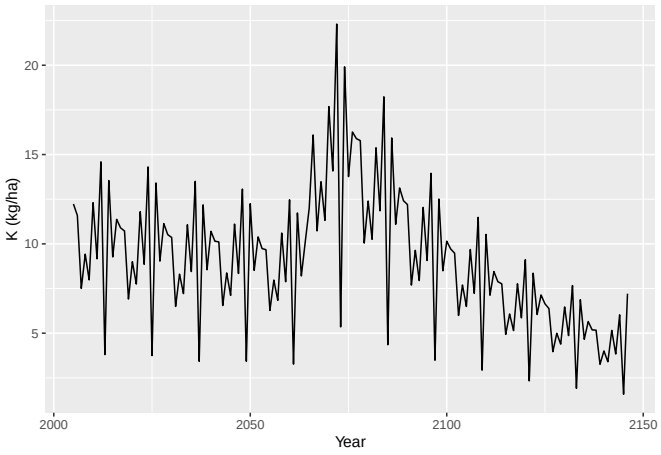


(a) Ca Leaching Losses

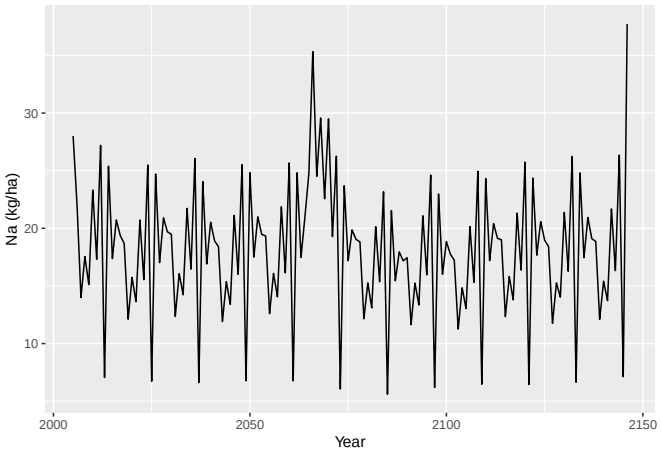


(b) Mg Leaching Losses

Figure 25: Annual Leaching Losses of Divalent Base Cations

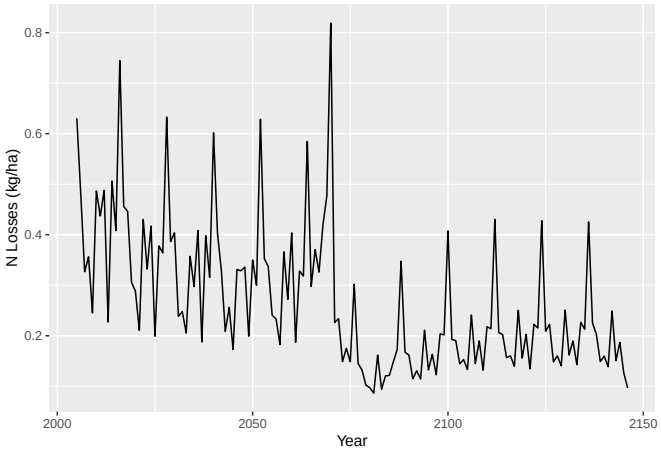


(a) K Leaching Losses

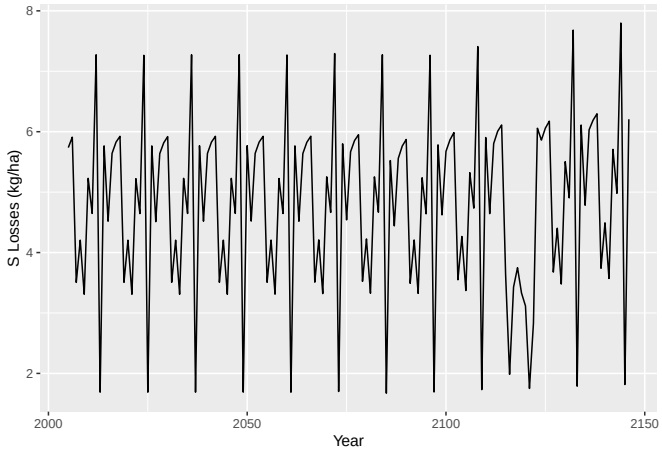


(b) Na Leaching Losses

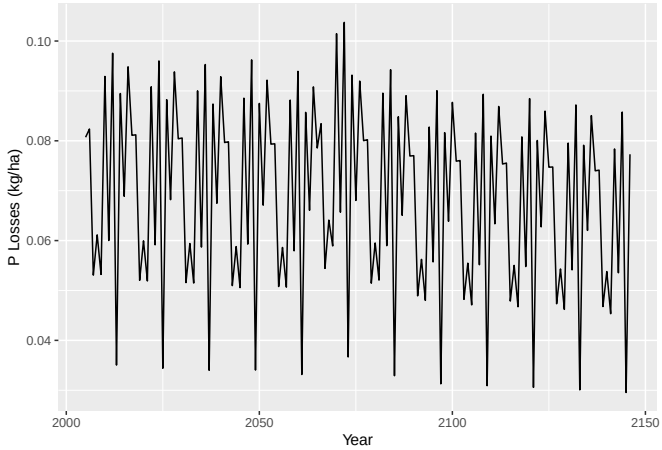
Figure 26: Annual Leaching Losses of Monovalent Base Cations



(a) N Leaching Losses



(b) S Leaching Losses



(c) P Leaching Losses

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