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)

| Soil Layer	μmol/L															
	Ca	Mg	K	Na	NO3	NH4	SO4	Cl	PO4	DOC	Al	Si	H+	pH	R	HR
Layer 1	14.13	18.7	17.5	46.0	2.696	2.577	24.4	55.8	1.131	397	0.14172	12.0	16.74	4.78	41.5	15.3
Layer 2	16.72	22.9	19.4	54.9	1.676	1.272	25.4	64.2	1.029	634	0.27814	27.3	24.12	4.62	62.8	27.8
Layer 3	23.31	27.5	22.5	49.8	1.327	0.978	25.4	71.1	0.933	694	0.18240	39.6	19.07	4.72	71.0	28.2
Layer 4	9.71	16.8	15.0	48.6	0.867	1.087	13.5	71.2	0.500	423	0.02885	48.6	22.95	4.64	41.7	18.7
Layer 5	13.39	22.1	15.3	51.6	0.809	2.179	12.8	76.1	0.276	422	0.00620	50.5	9.13	5.04	46.7	13.7
Layer 6	12.49	19.9	17.3	54.1	0.802	2.553	12.8	81.7	0.342	385	0.00788	54.0	10.91	4.96	41.9	13.1
Layer 7	15.83	21.6	16.2	60.8	0.804	3.419	12.8	88.0	0.345	429	0.00477	58.3	7.40	5.13	48.4	12.8
Layer 8	15.58	20.0	18.5	68.3	0.807	3.953	12.8	92.6	0.283	425	0.00369	60.5	6.02	5.22	49.1	11.7
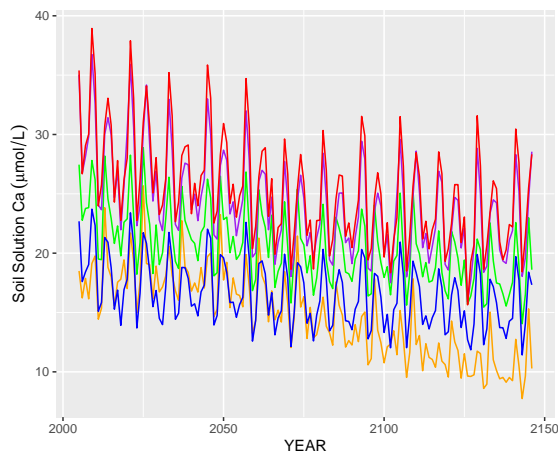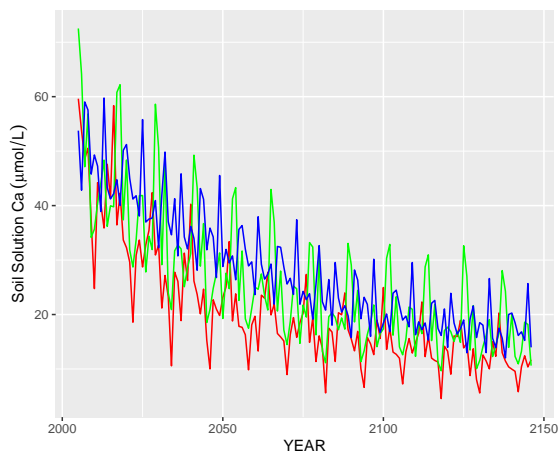
Figure 1: Figure 1: Monthly Calcium Concentrations by Soil Layer
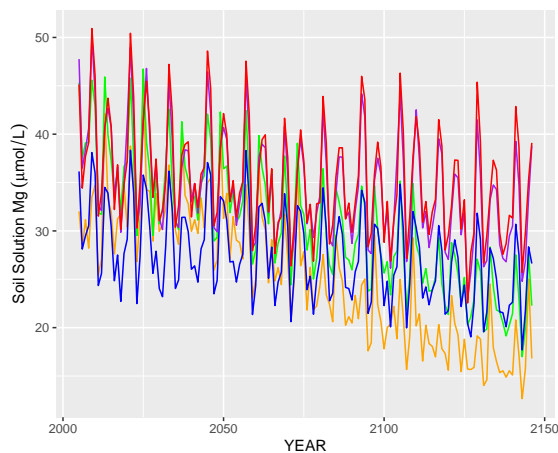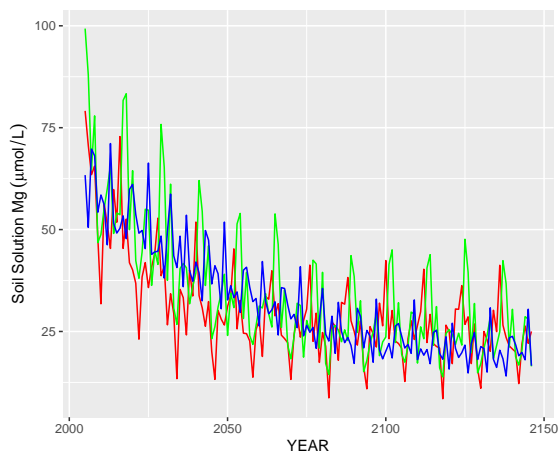

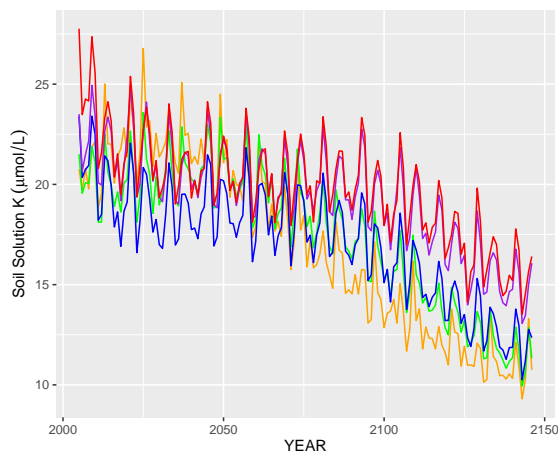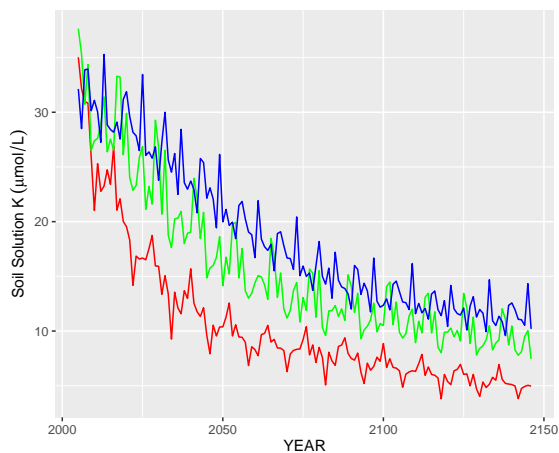Figure 2: Figure 2: Monthly Magnesium Concentrations by Soil Layer

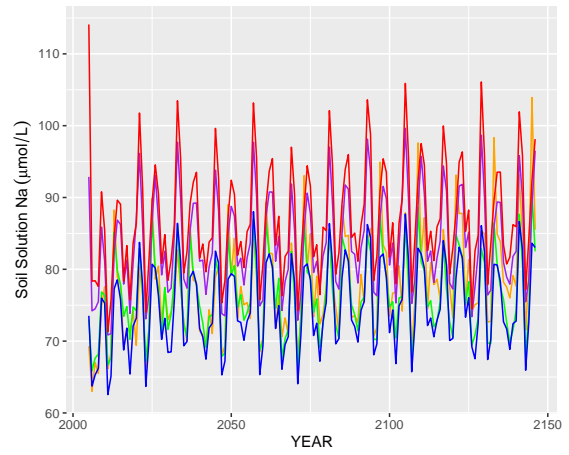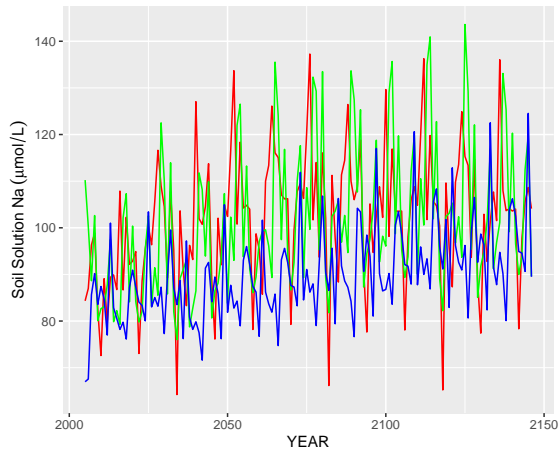Figure 3: Figure 3: Monthly Potassium Concentrations by Soil Layer

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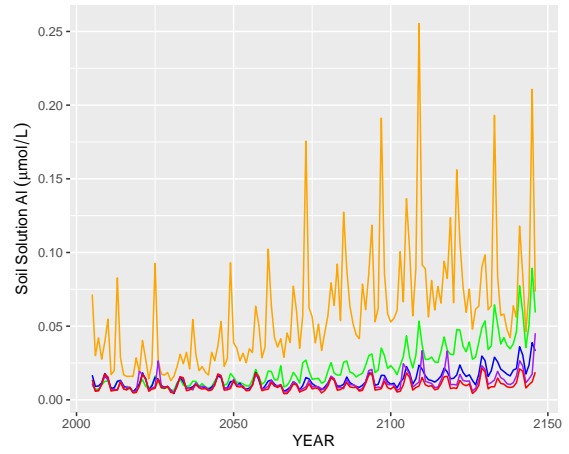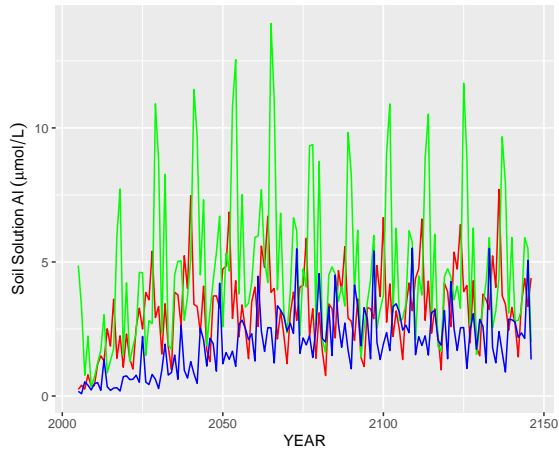

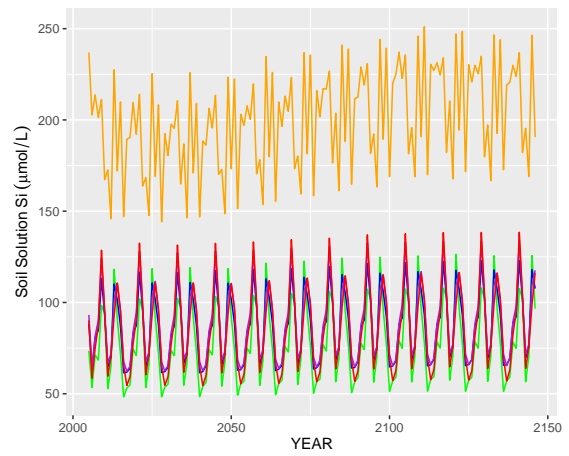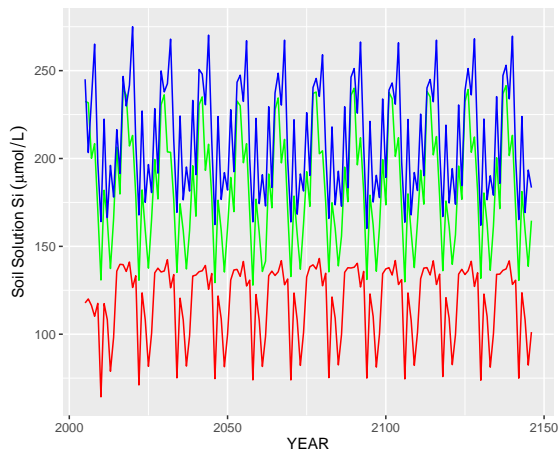Figure 5: Figure 5: Monthly Aluminum Concentrations by Soil Layer

Figure 6: Figure 6: Monthly SiO2 Concentrations by Soil Layer
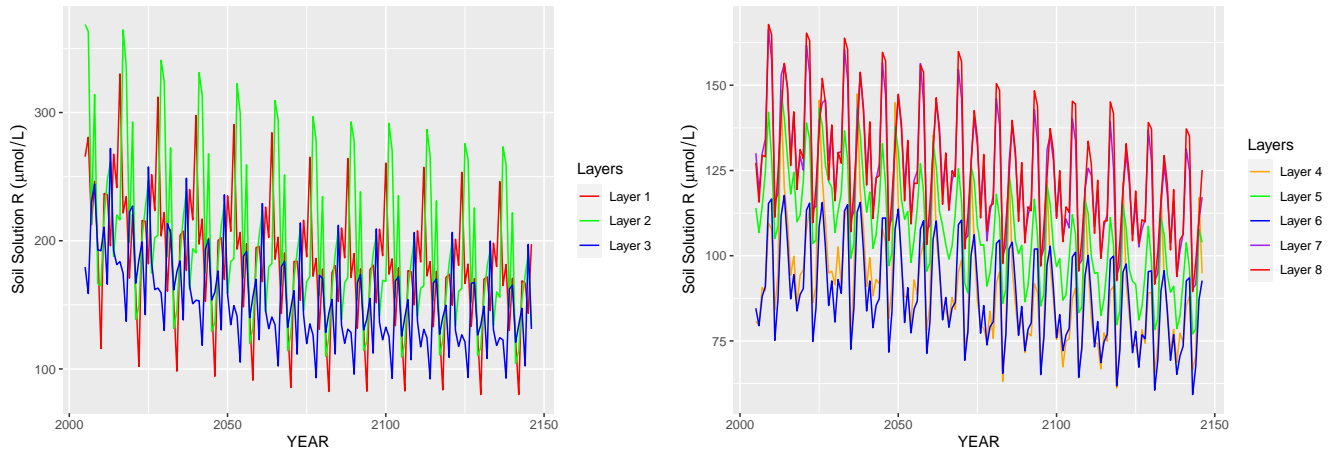
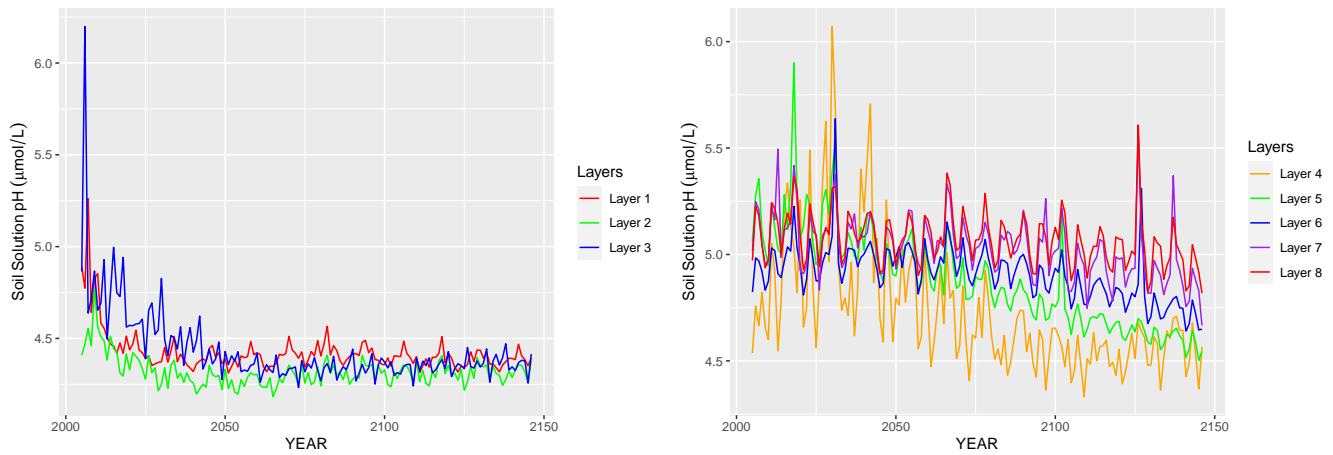Figure 7: Figure 7: Monthly Organic Acid Base (R-) Concentrations by Soil Layer

Figure 8: Figure 8: Monthly pH by Soil Layer
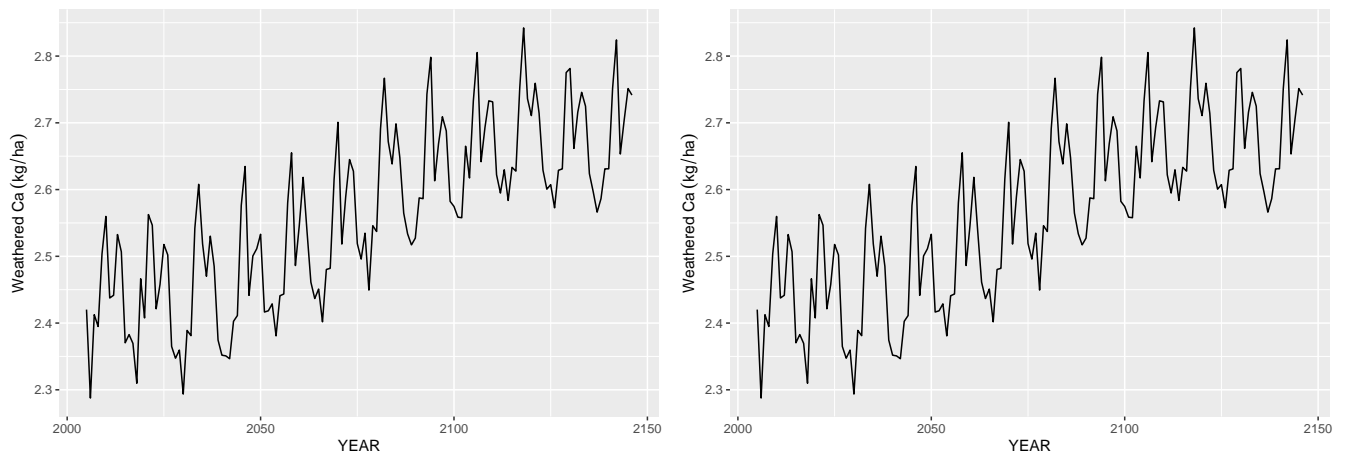
Weathering Results

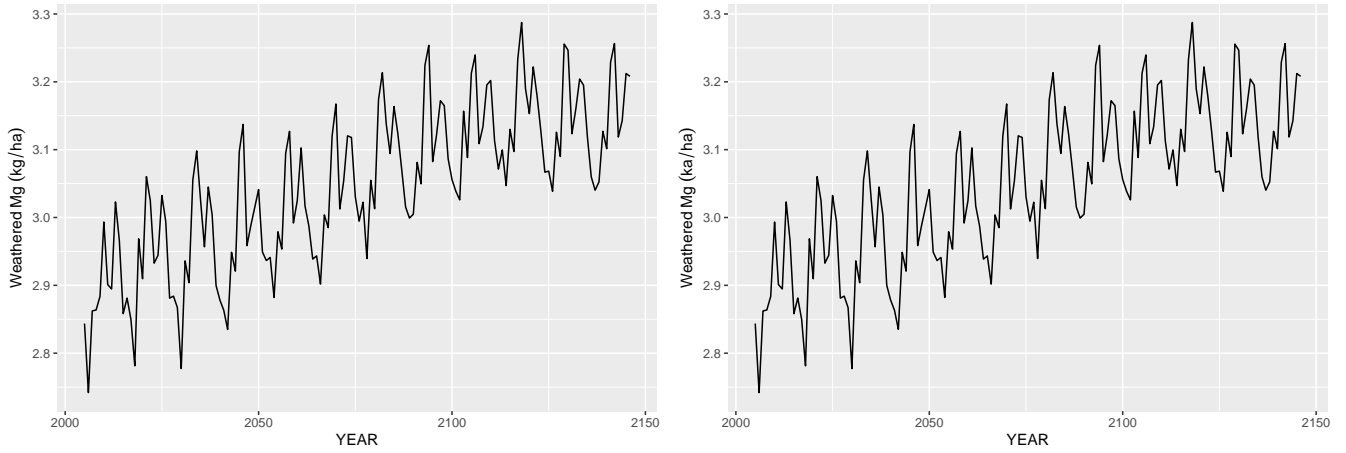

Figure 9: Figure 9: Calcium Weathering by Layer

Figure 10: Figure 10: Magnesium Weathering by Layer
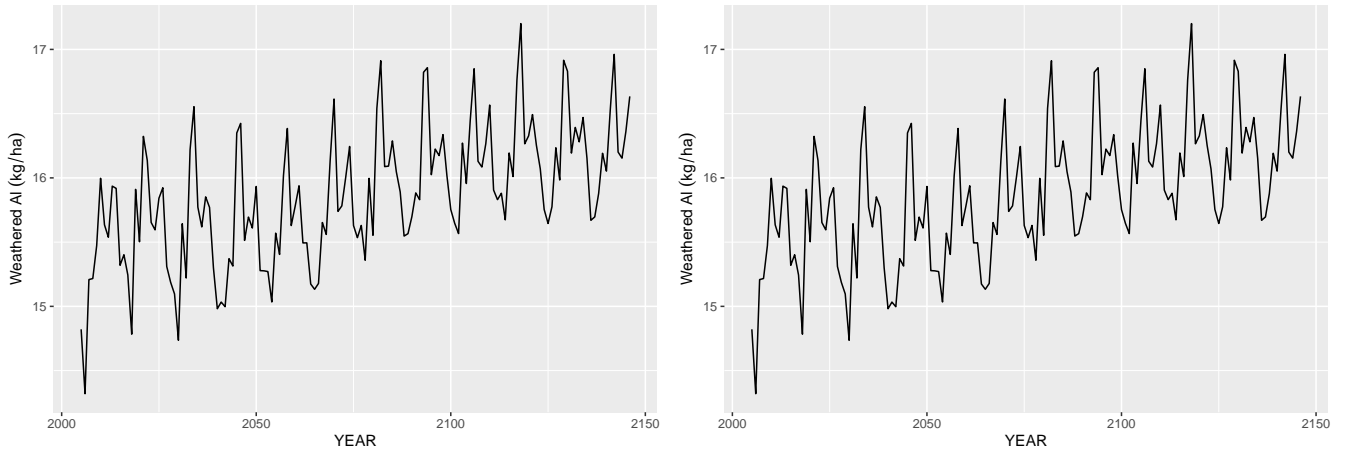

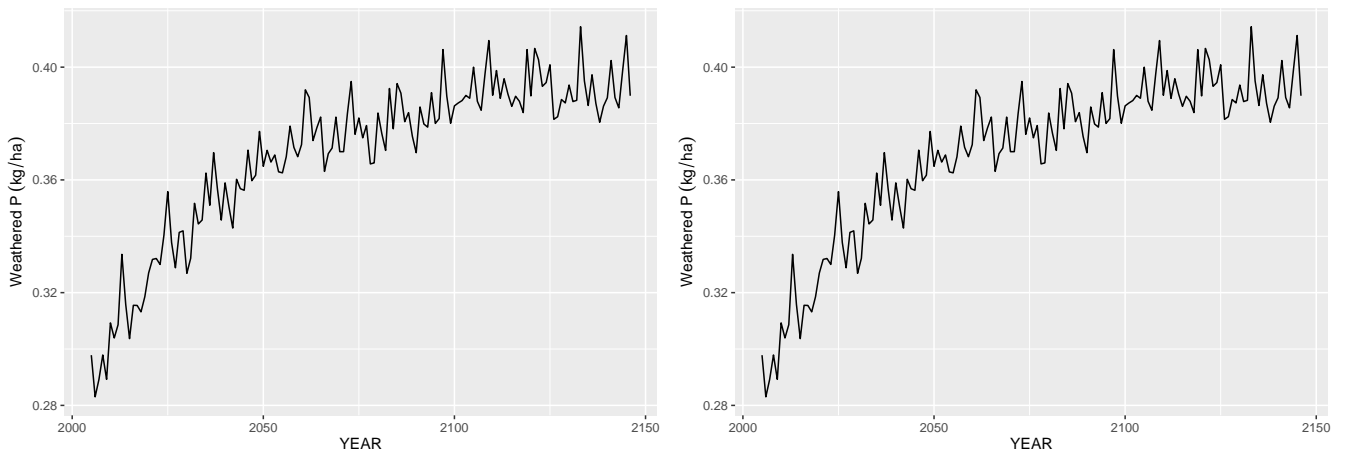Figure 11: Figure 12: Aluminum Weathering by Layer

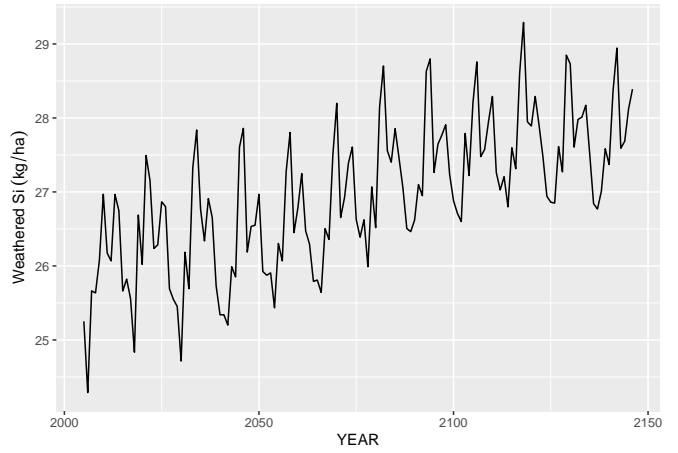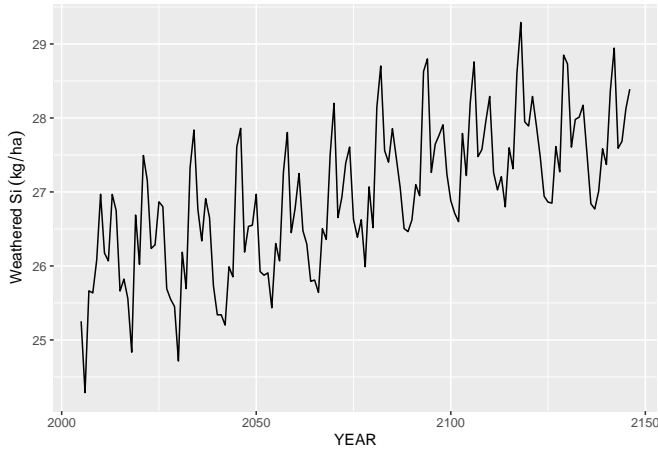Figure 12: Figure 13: Phosphate Weathering by Layer

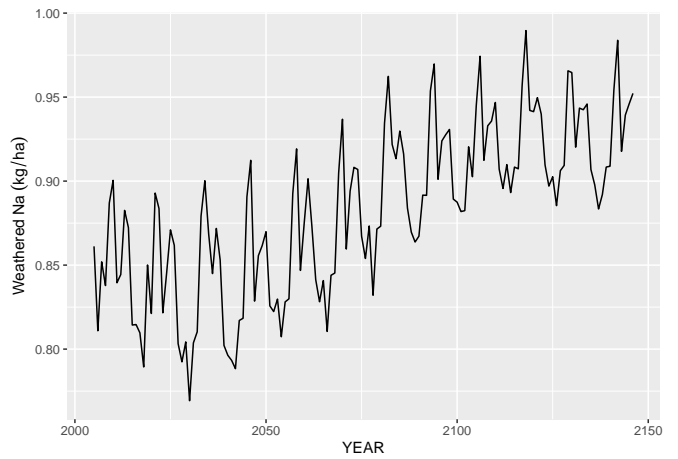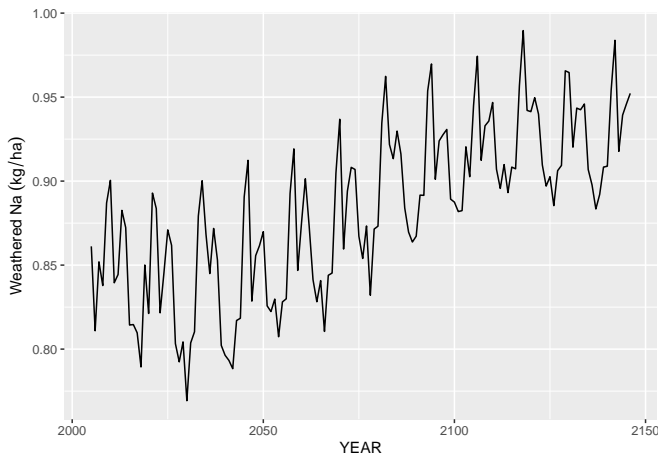Figure 13: Figure 14: Silica Weathering by Layer

Figure 14: Figure 15: Sodium Weathering by Layer

Figures

Soil Organic Matter (SOM) Results
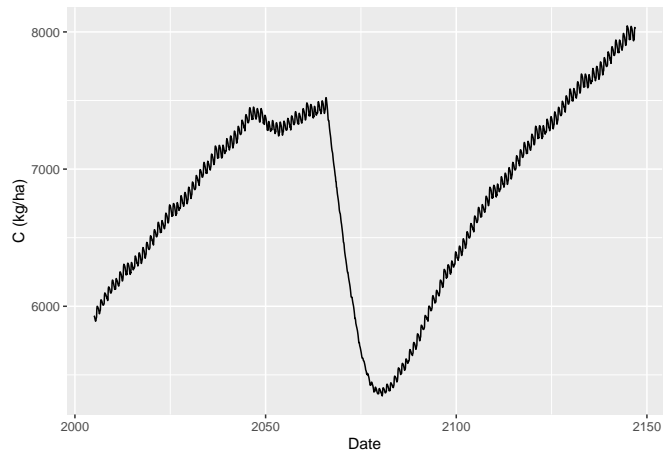
Litter Pool Results

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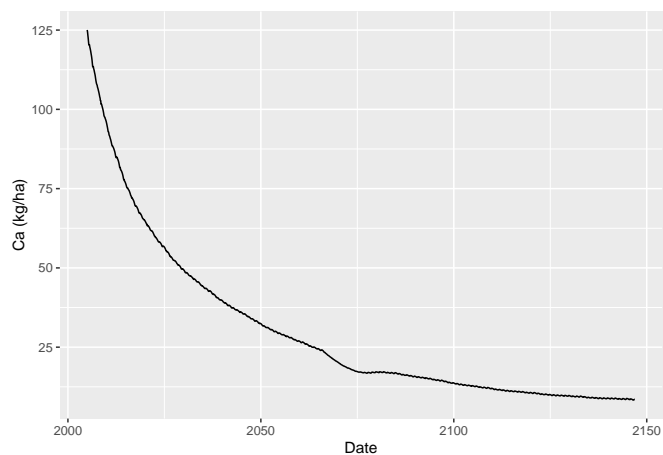

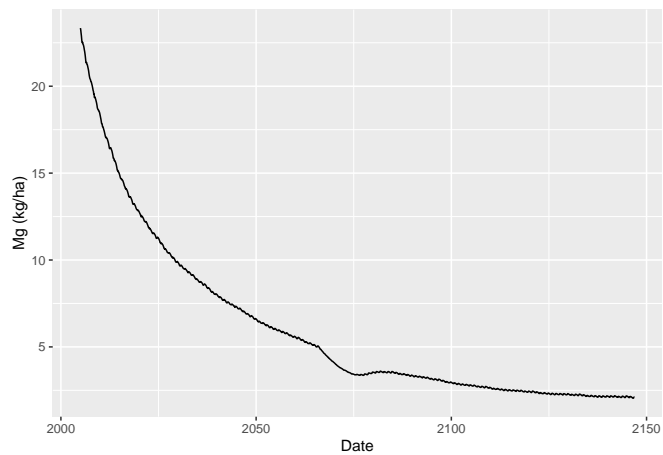Figure 16: Figure 18: Litter Pool Ca Content Over Simulation Period

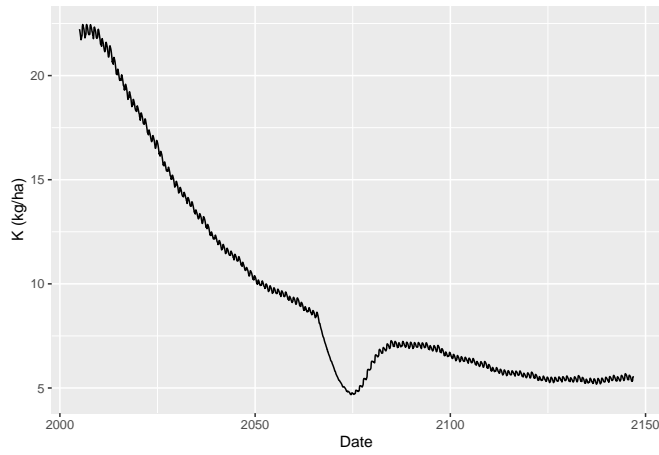Figure 17: Figure 19: Litter Pool Mg Content Over Simulation Period

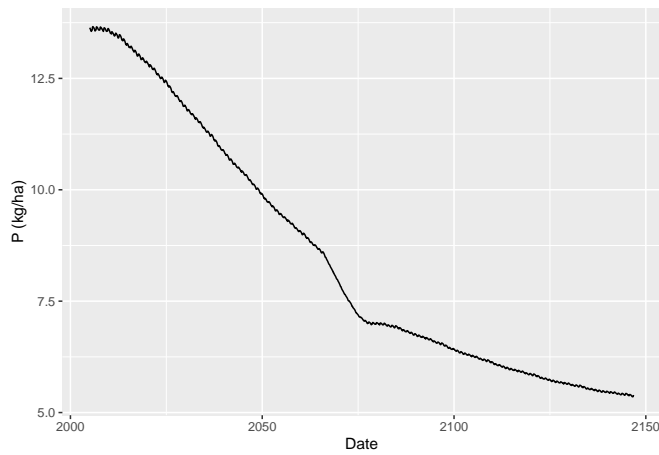Figure 18: Figure 20: Litter Pool K Content Over Simulation Period

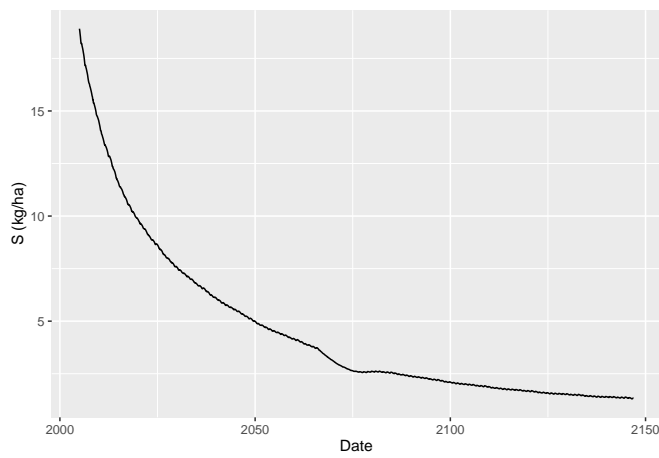Figure 19: Figure 21: Litter Pool P Content Over Simulation Period

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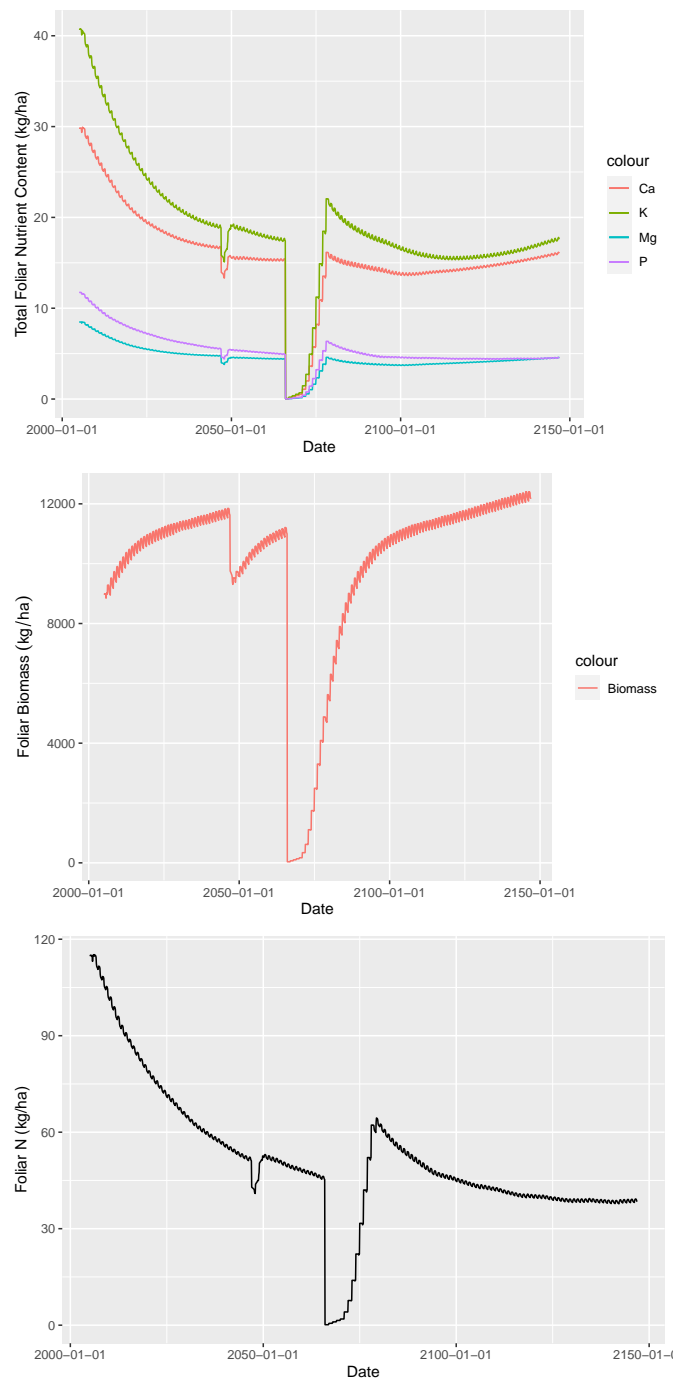
Tree Nutrient Content

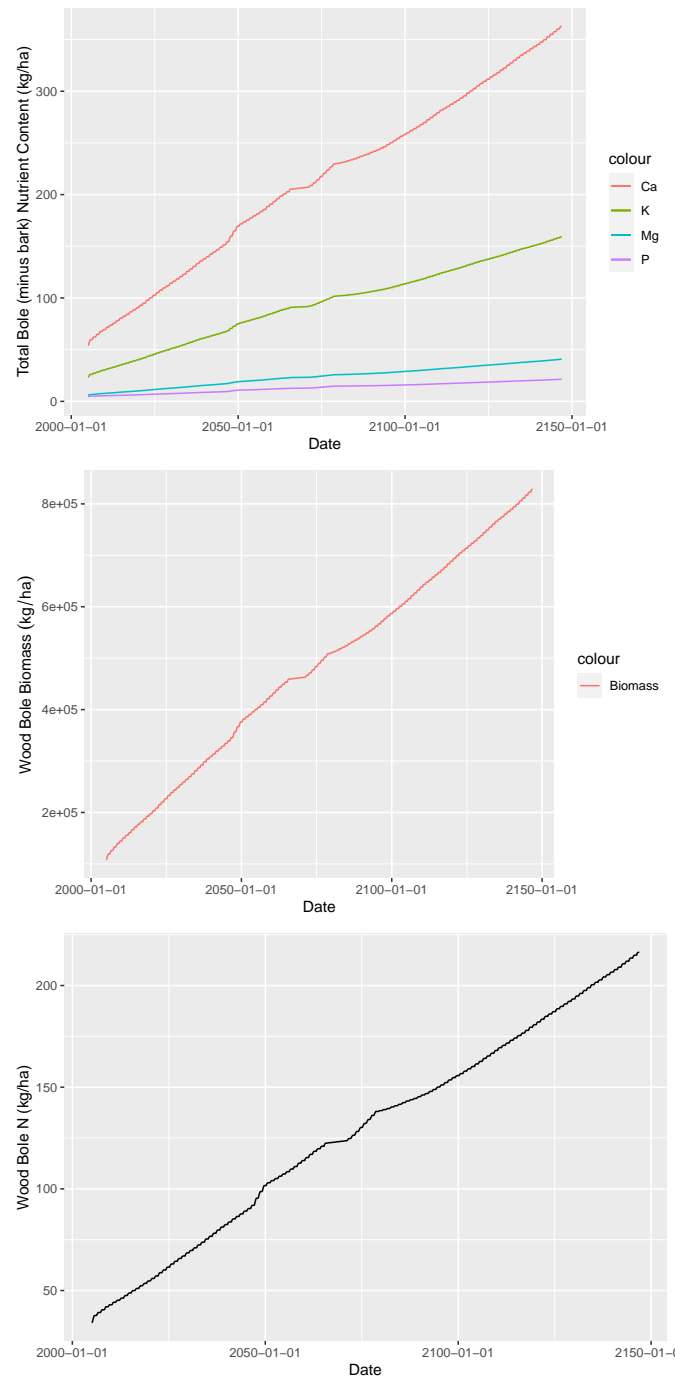Figure 21: Figure 23: Tree Nutrient Content (kg/ha) in the Foliage

Figure 22: Figure 24: Tree Nutrient Content (kg/ha) in the Bole. Exlcudes Bark
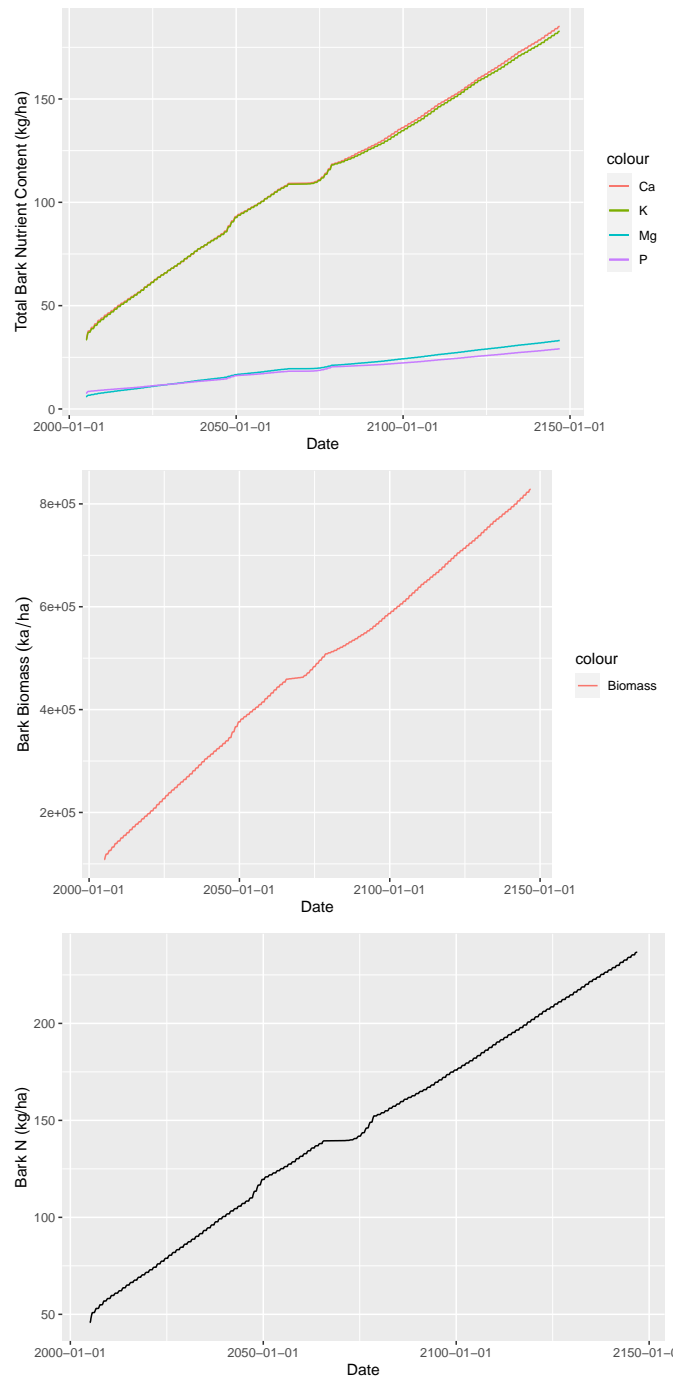
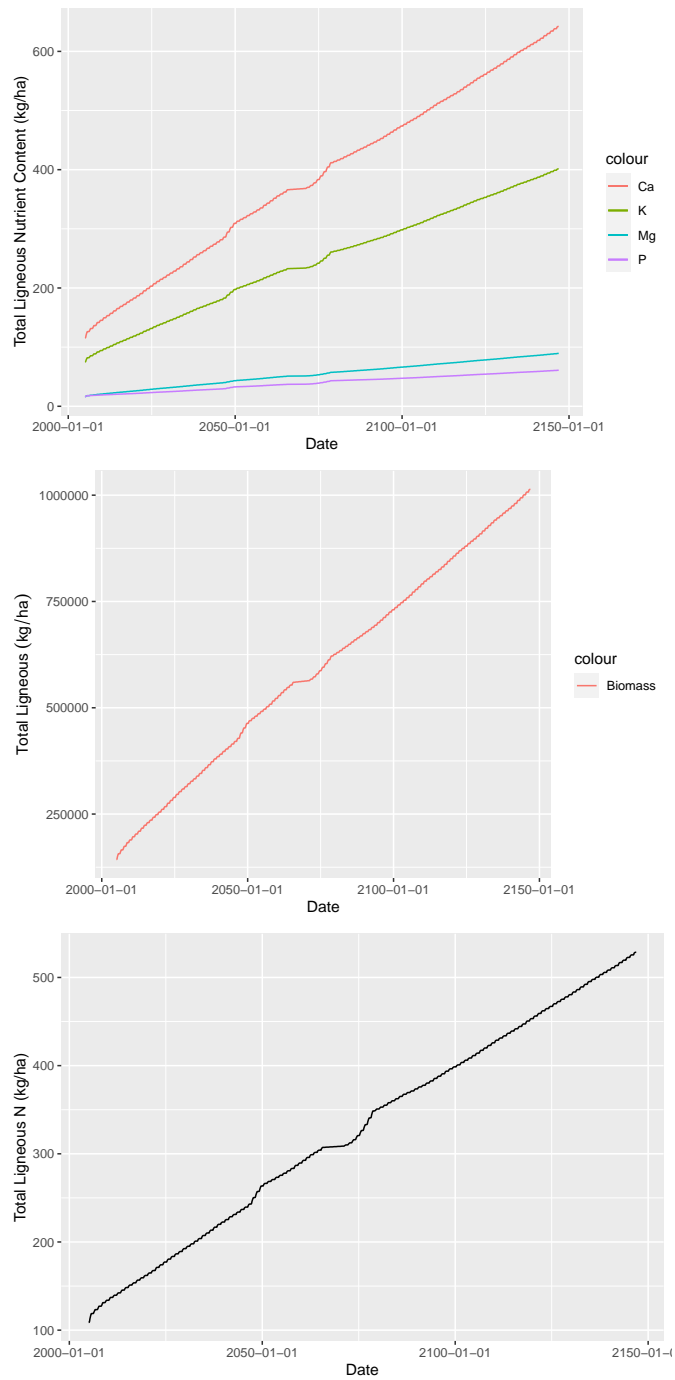Figure 23: Figure 25: Tree Nutrient Content (kg/ha) in the Bark

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

```
## `summarise()` ungrouping output (override with `.groups` argument)
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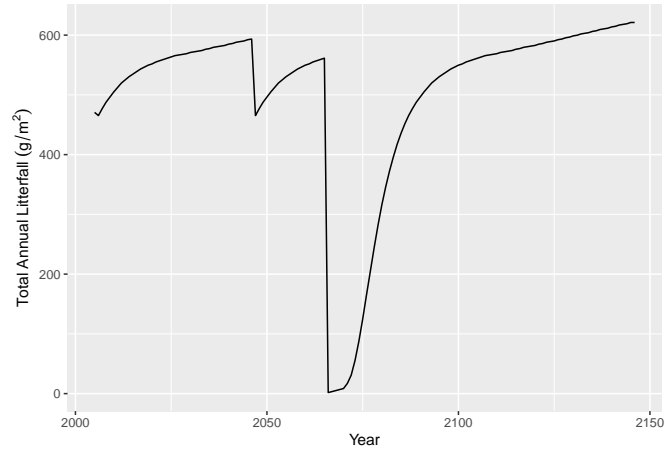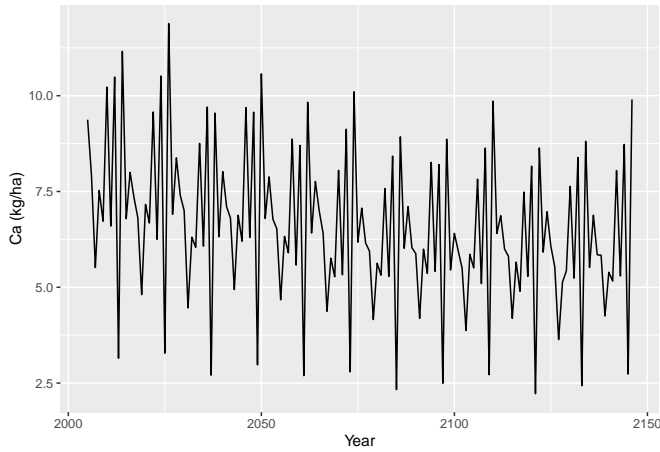
Figure 25: Litterfall quantity
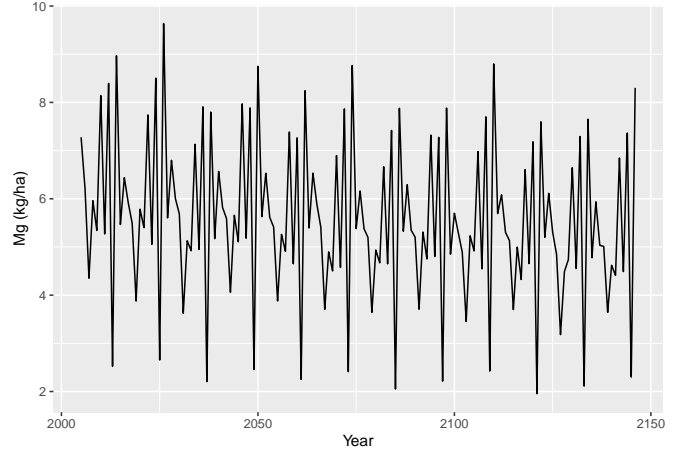
Cation Exchange Capacity

Not yet complete

Anion Exchange Capacity
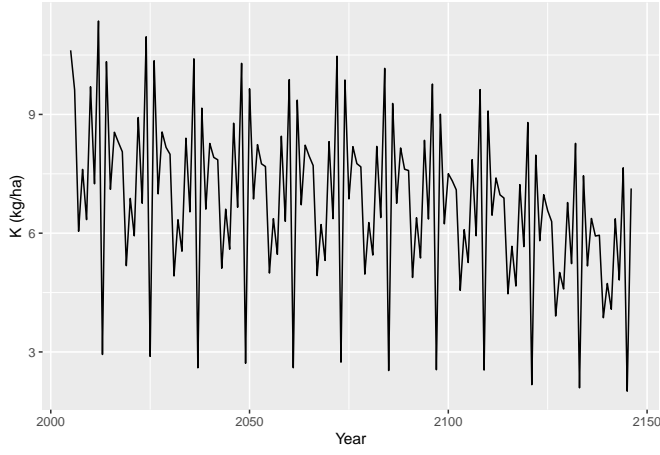
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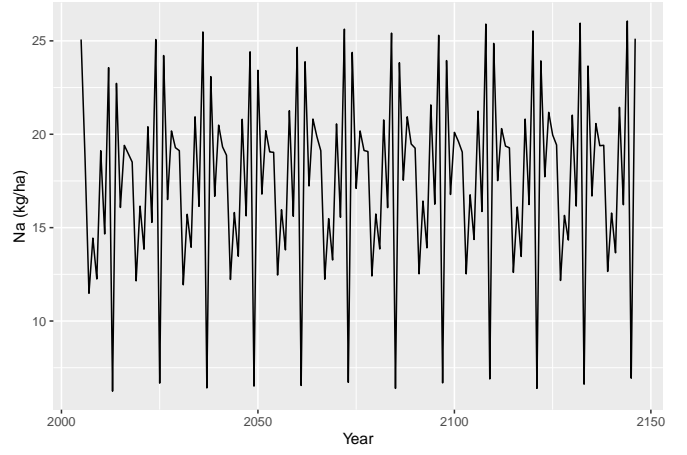## Leaching Losses

(a) Ca Leaching Losses

(b) Mg Leaching Losses

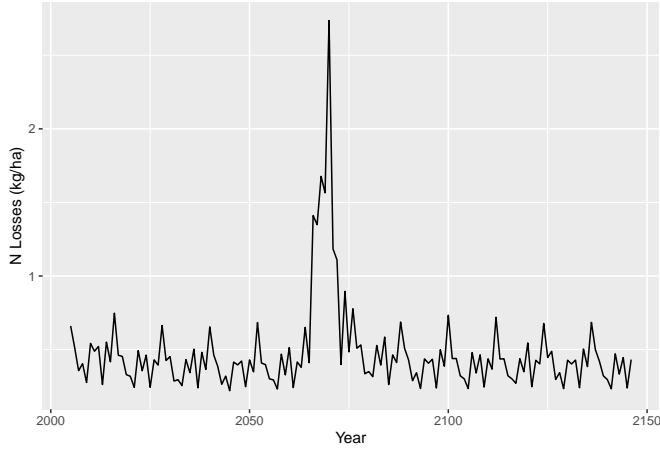Figure 26: Annual Leaching Losses of Divalent Base Cations
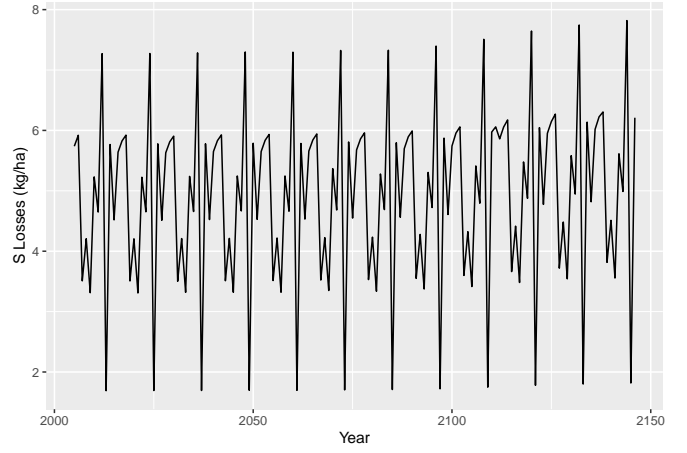
(a) K Leaching Losses
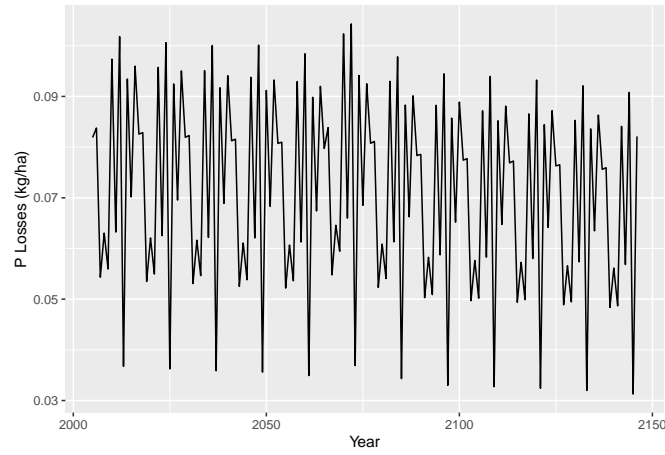

(b) Na Leaching Losses

Figure 27: Annual Leaching Losses of Monovalent Base Cations

(a) N Leaching Losses

(b) S Leaching Losses

(c) P Leaching Losses

Figure 28: Annual Leaching Losses of N, P, and S

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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

Analysis 3

Nutrient buildup in layers over time (Ca should buildup in top layers)