

2. Are shrubs (and grasses?) limited primarily by soil N availability, specifically?

Vs. water (or P, or ...)

Empirical finding: N is superabundant in leaves (vs. PS demand)

Rough calculation:

Max. PS rate per area \approx ca. $15 \mu\text{mol m}^{-2} \text{s}^{-1}$

...but leaves are fairly high in N fraction, and thick

(mass per area $\approx 150 \text{ g}_{\text{DM}} \text{ m}^{-2}$)

→ N per area $\approx 4.5 \text{ g}_{\text{N}} \text{ m}^{-2}$

→ PS rate per N is about $3.3 \mu\text{mol g}_{\text{N}}^{-1} \text{s}^{-1}$

Mesic plants are about 20 / 50 / 1.5 / 13.3!