Grazing Management Impacts on Light-Use-Efficiency

Q1: How is photosynthetic efficiency affected by grazing intensity?

- Grazing management impacts photosynthetic efficiency by reducing LAI and APAR, which can be identified using remote sensing.
- Grazing severity varies (spatially and temporally) and can't be measured using remote sensing?

Q2: Can grazing intensity or managed range be quantified using remote sensing?

- Grazing intensity affects photosynthetic capacity following defoliation. Damage to photosynthetic capacity exceeds that in ungrazed plants of the same age. Photosynthetic capacity can be recovered if damage is substantial or recurring, but defoliation through grazing generally slows or reverses photosynthesis.

Q3: Can defoliation be determined from remote sensing data?

- Defoliation through grazing can be detected using remote sensing, but the extent and severity of defoliation may be underestimated due to post-grazing recovery.

Historical grazing in rangelands: effects on NPP

- Historical grazing impacts NPP through various mechanisms, including:
  - Rangeland degradation as a result of overgrazing can lead to soil erosion, changes in species composition, and perhaps even ecosystem collapse.
  - Intensive rotational grazing increases annual forage production, potentially leading to an increase in standing biomass.
  - Standing biomass and LAI may be increased under traditional, non-rotational grazing, but this increase may be due to factors other than grazing intensity.

NPP - APAR = f (incoming radiation – reflected radiation)