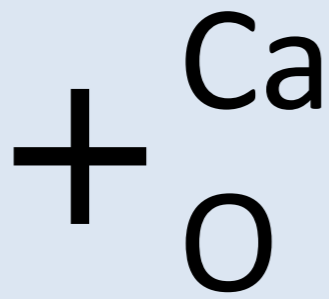


Spatial and Temporal Variation in Available Protein Relative to Reproductive Fitness of Moose in Alaska

RC 2 Tab 1



sand



building materials
(manufactured by man)

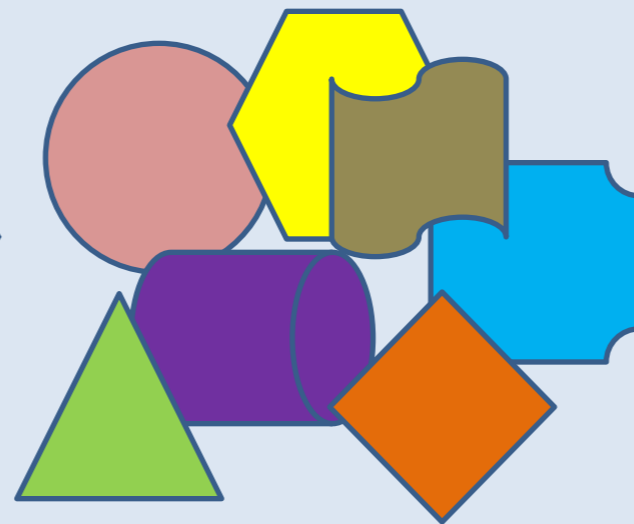
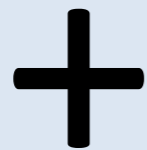


house structure



Nitrogen

times 6.25 =
“crude” protein



amino acids

(manufactured by microbes
living in the rumen)



protein/muscle
(lean body mass)

Compared to livestock forages, there's an added twist when we start analyzing moose forages...

Tannin

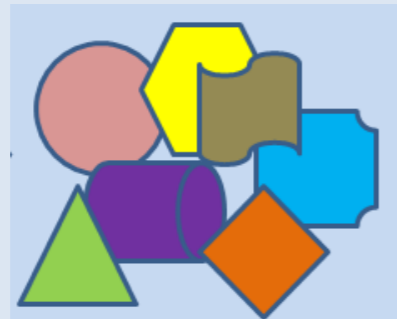
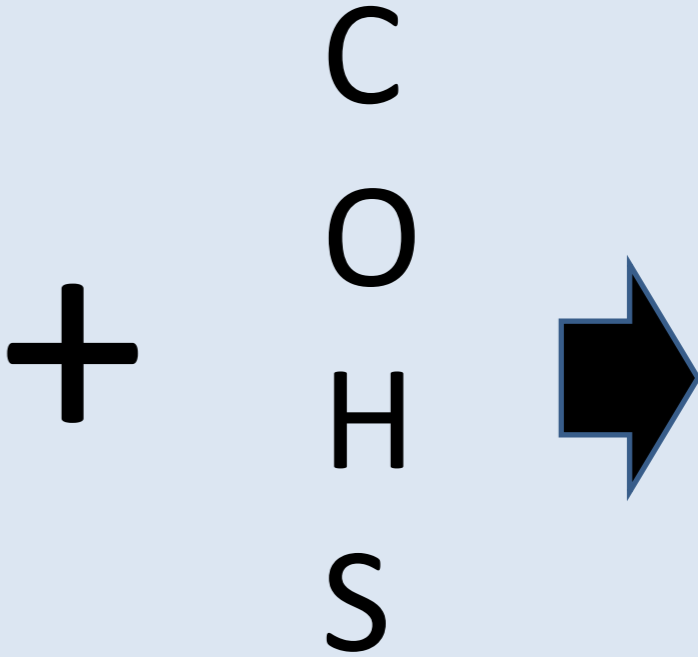
binds up some of the N



Nitrogen
("crude" protein)



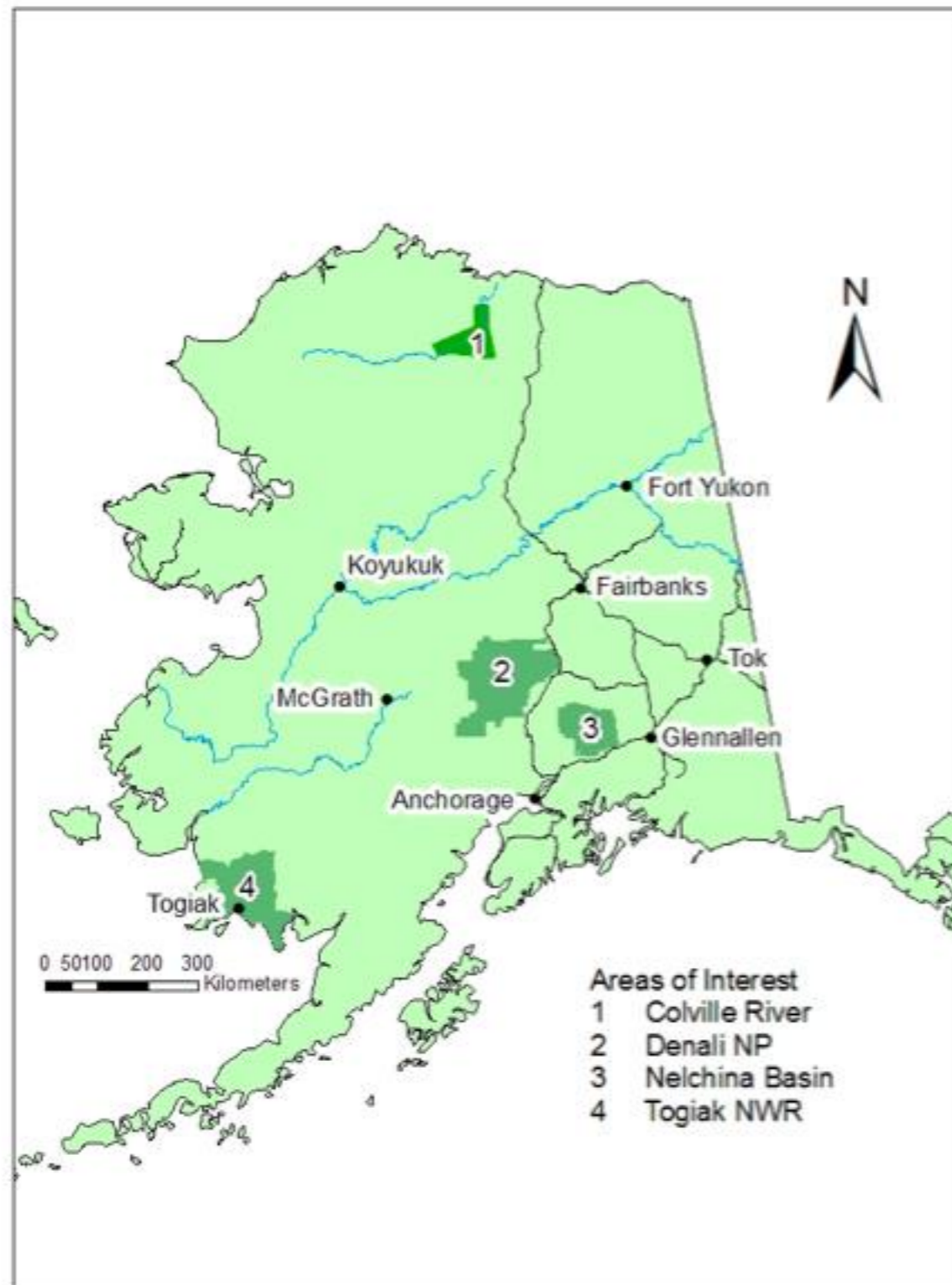
Decreased amount of nitrogen
available for protein synthesis

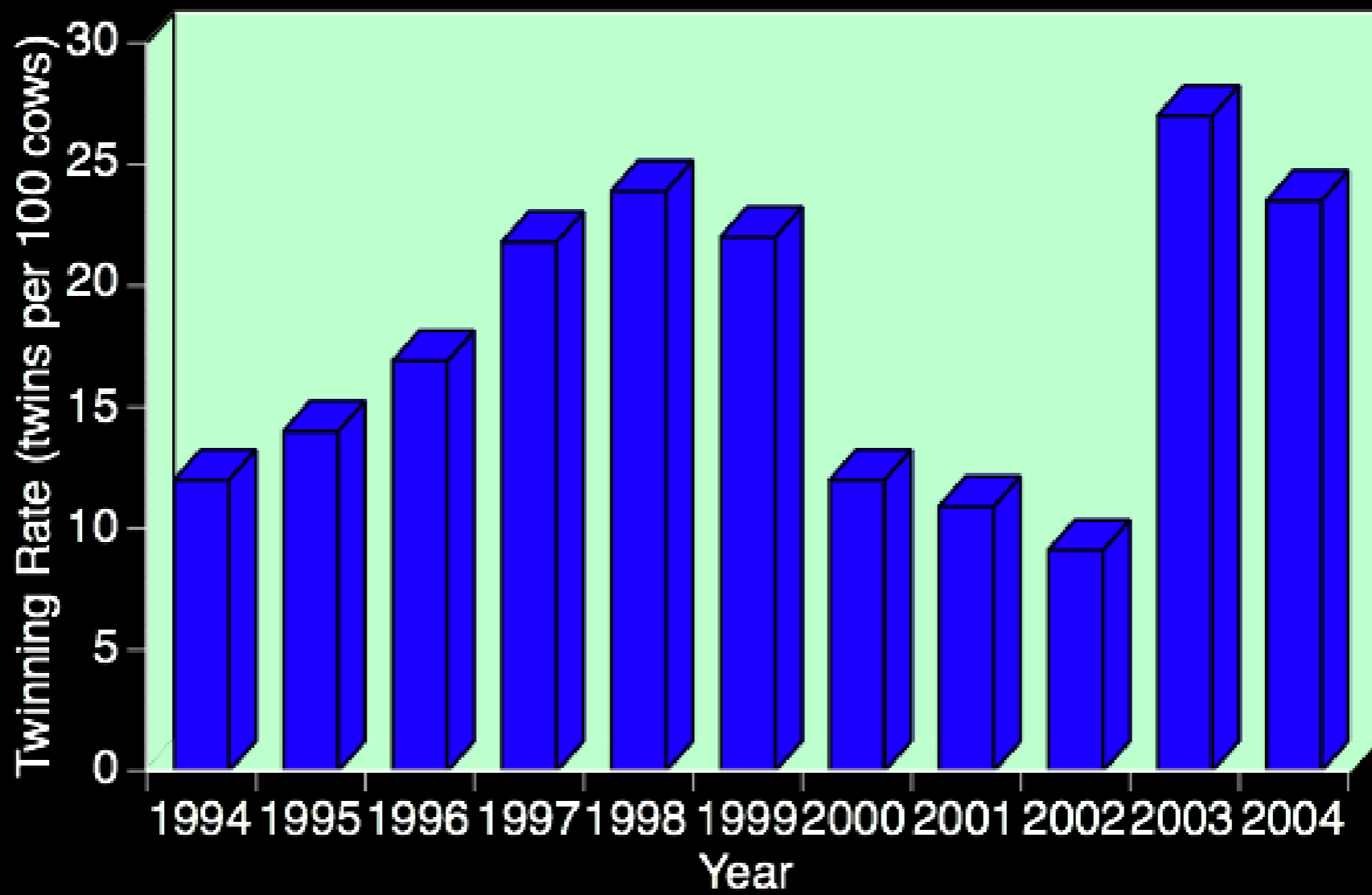


Much less "digestible" protein is produced
than predicted by "crude protein"



**Spatial and Temporal Variation in
Available Protein Relative to
Reproductive Fitness of Moose in
Alaska**

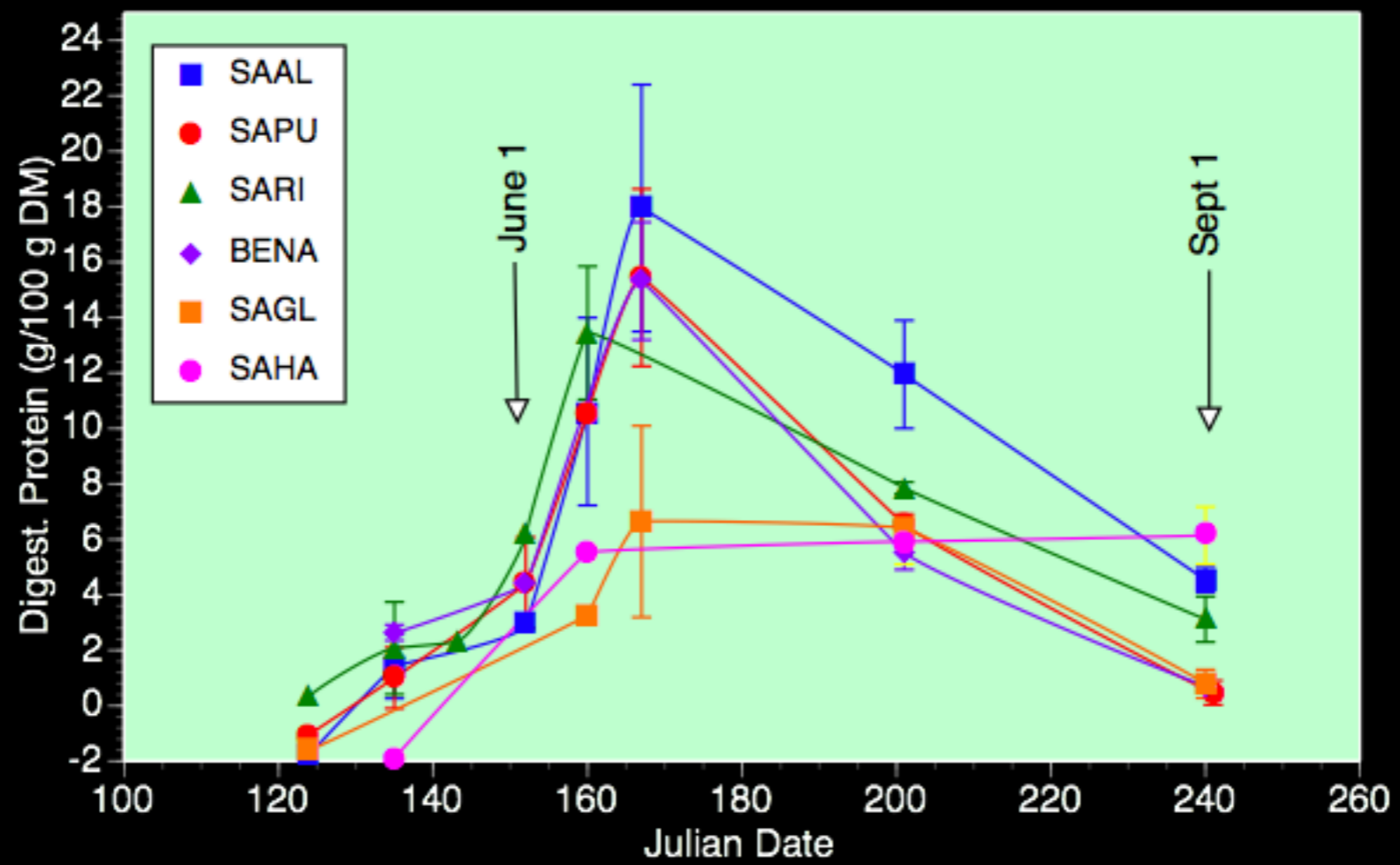


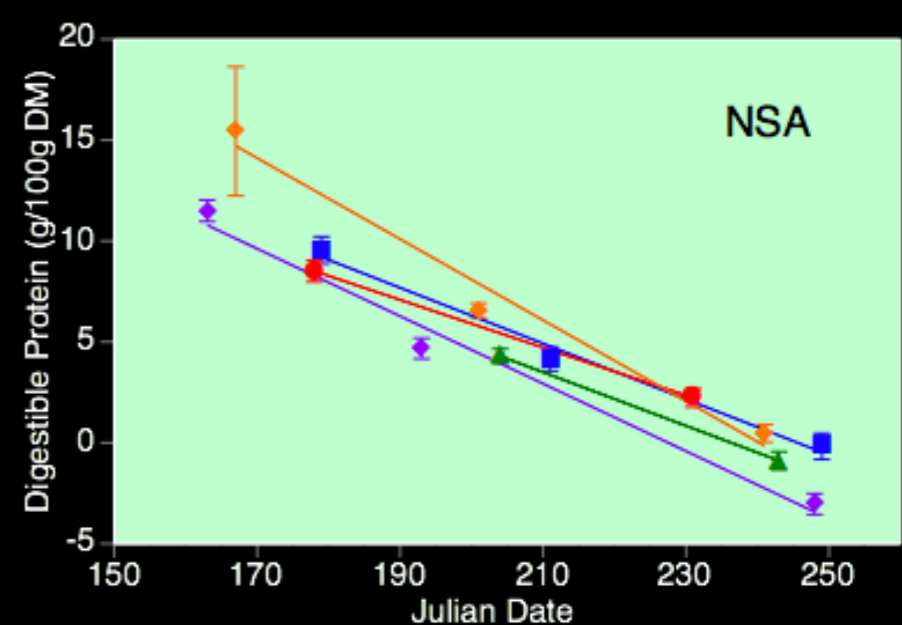
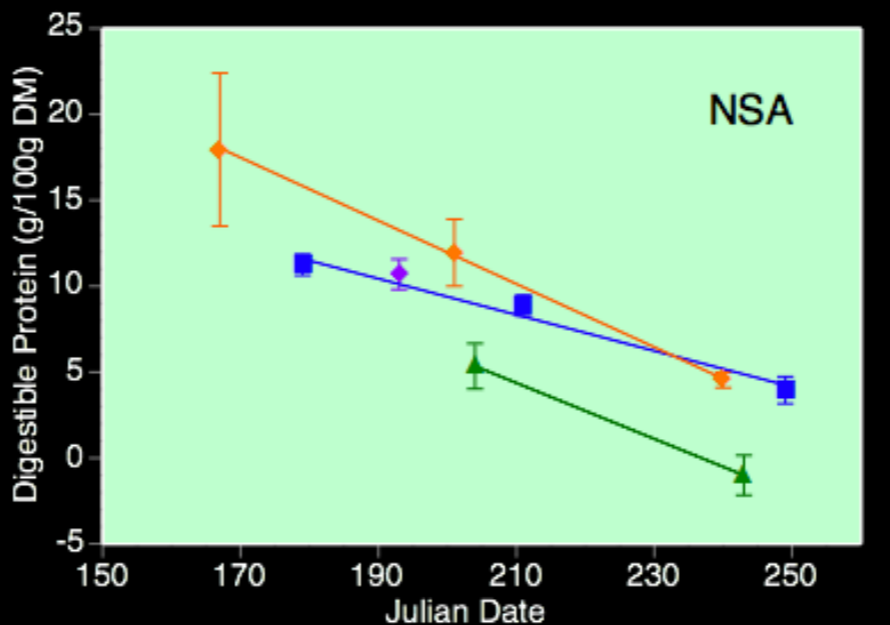
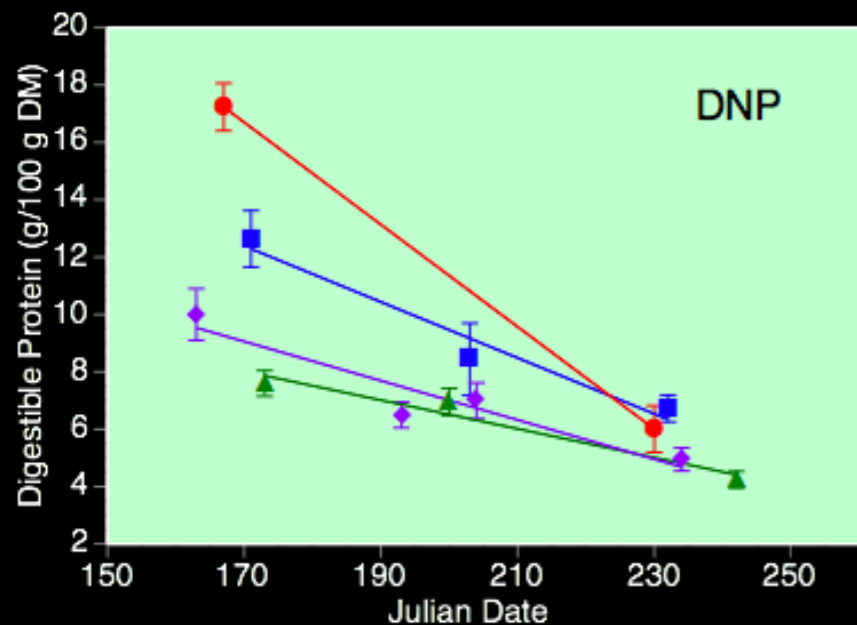
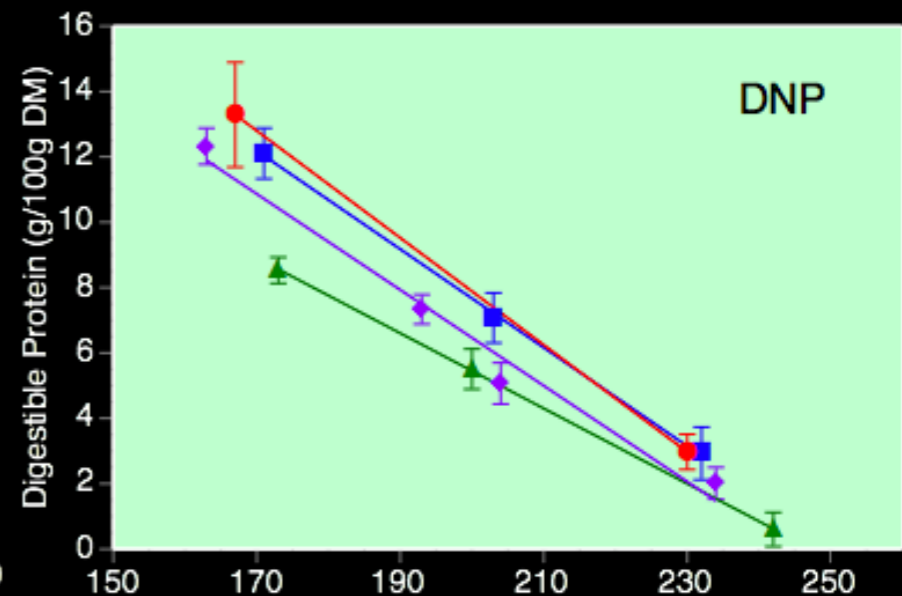
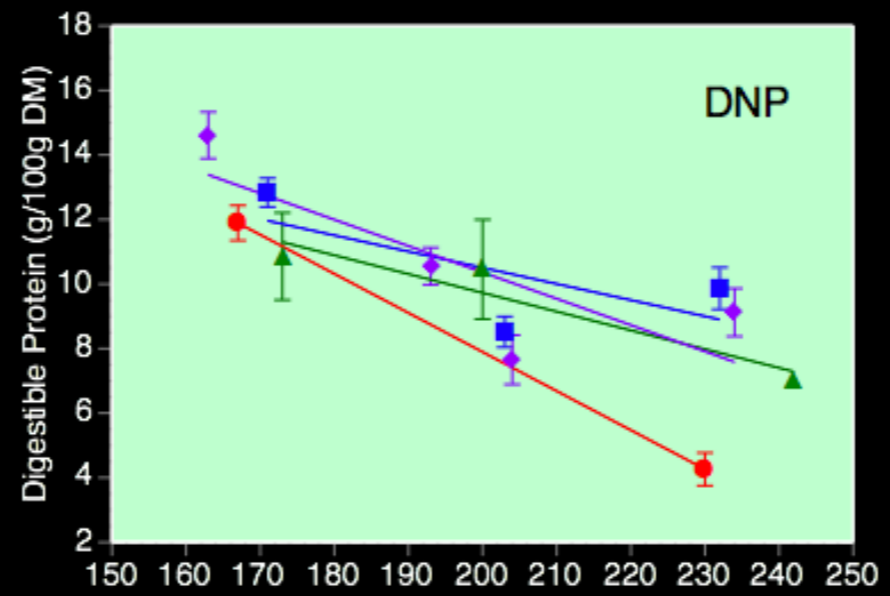
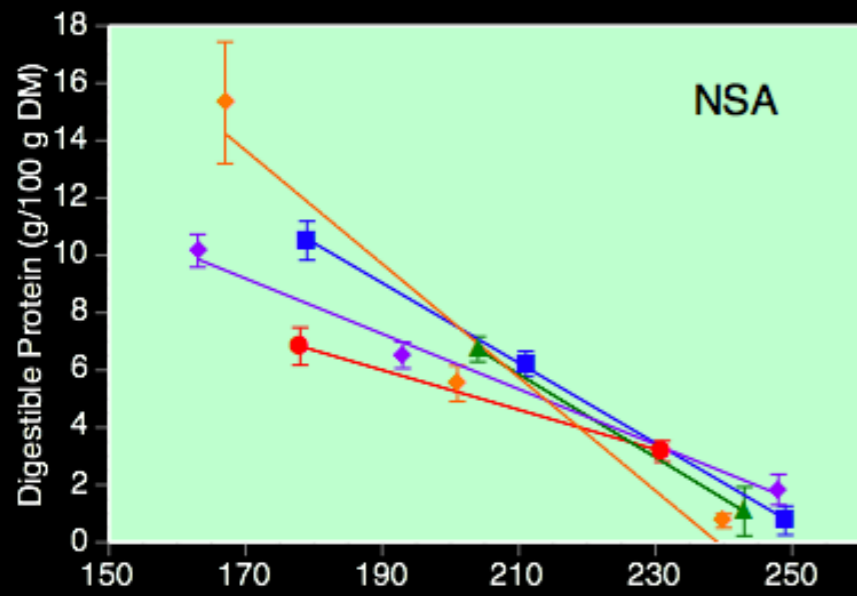


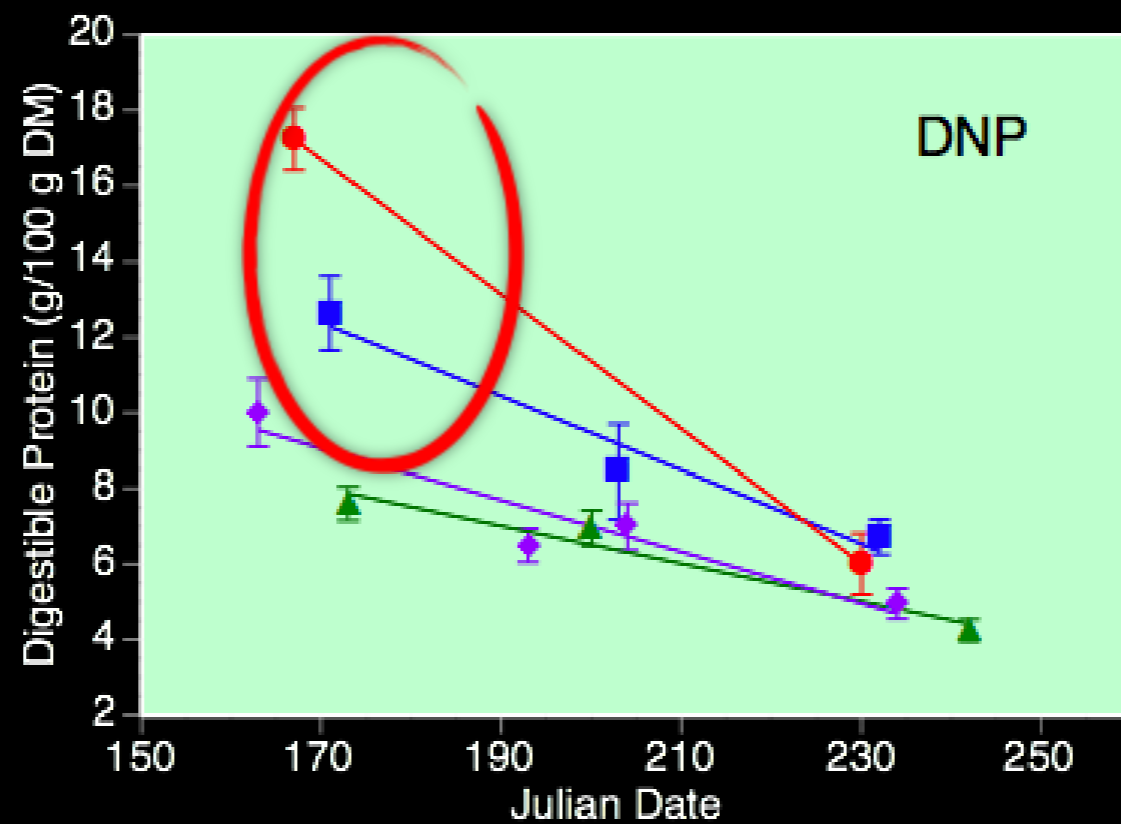
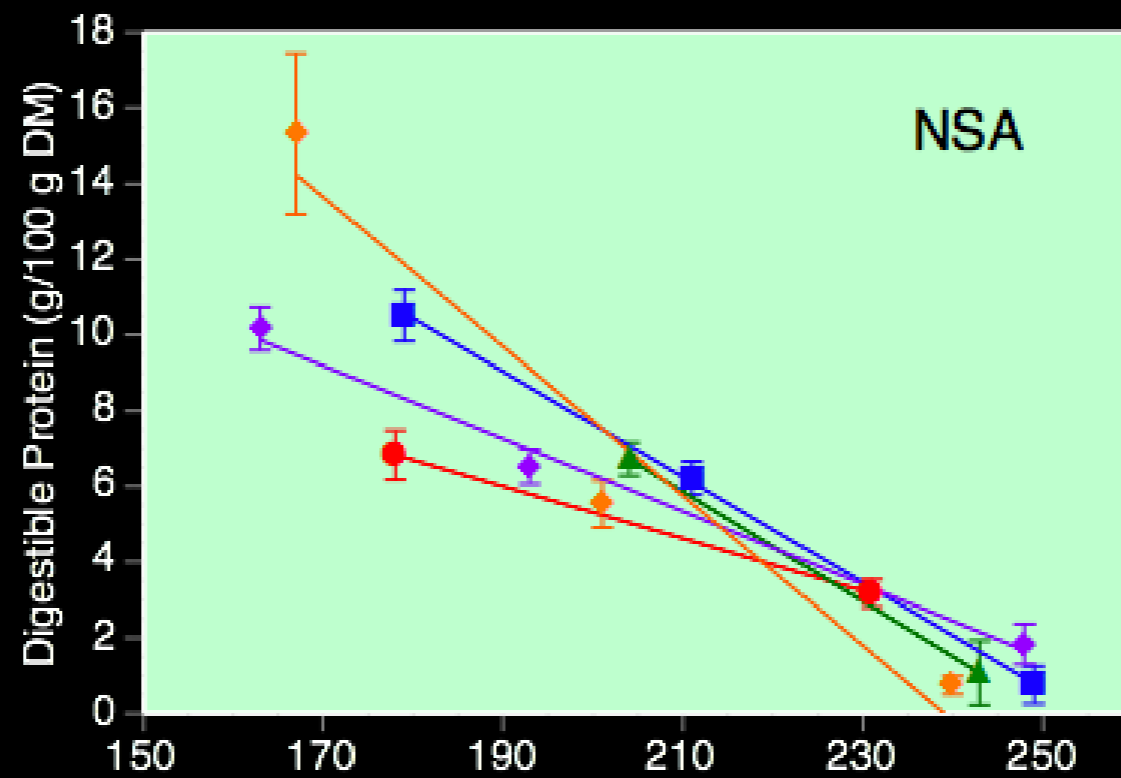


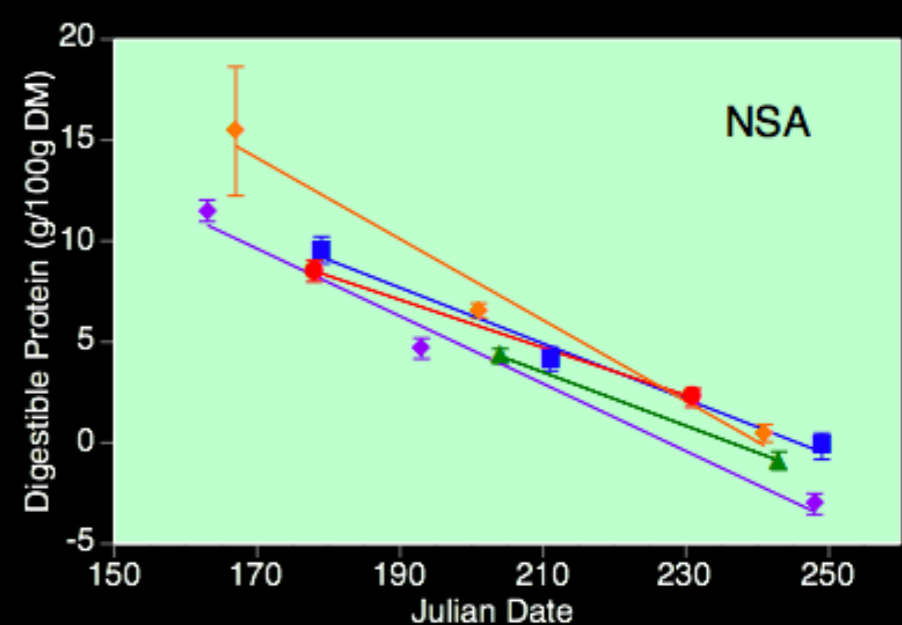
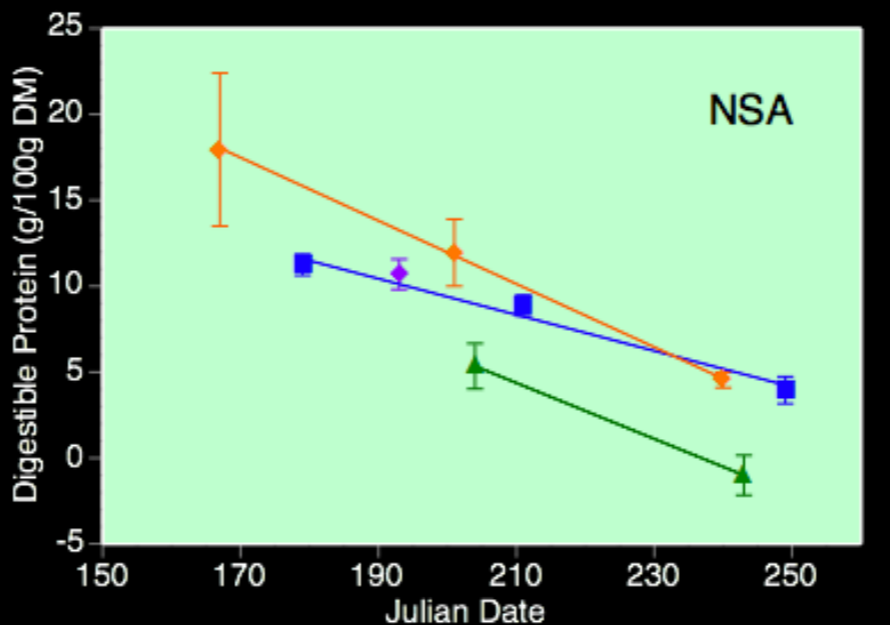
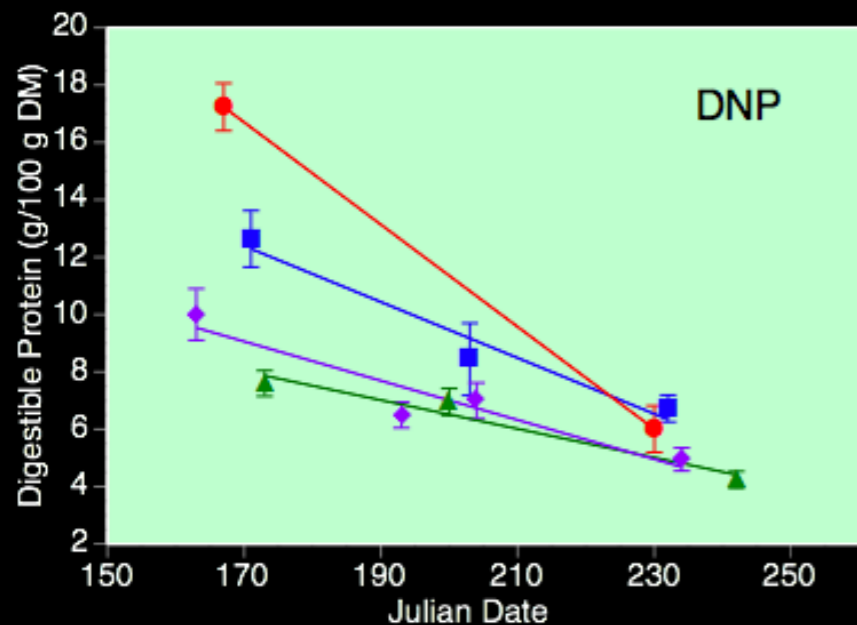
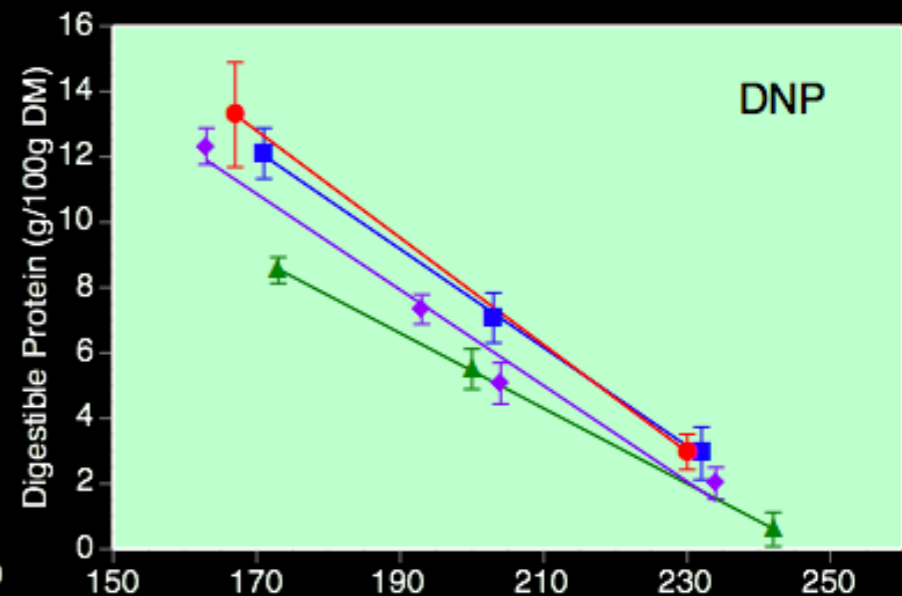
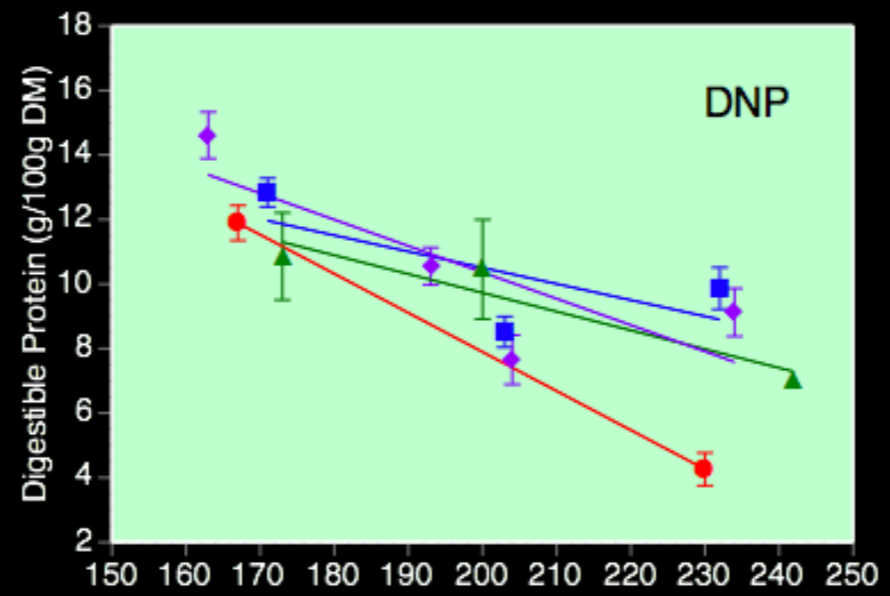
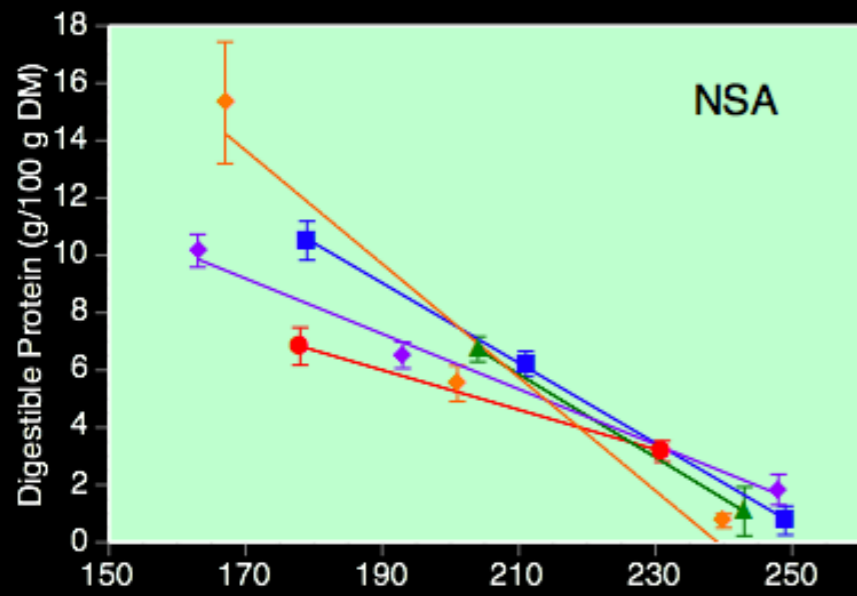


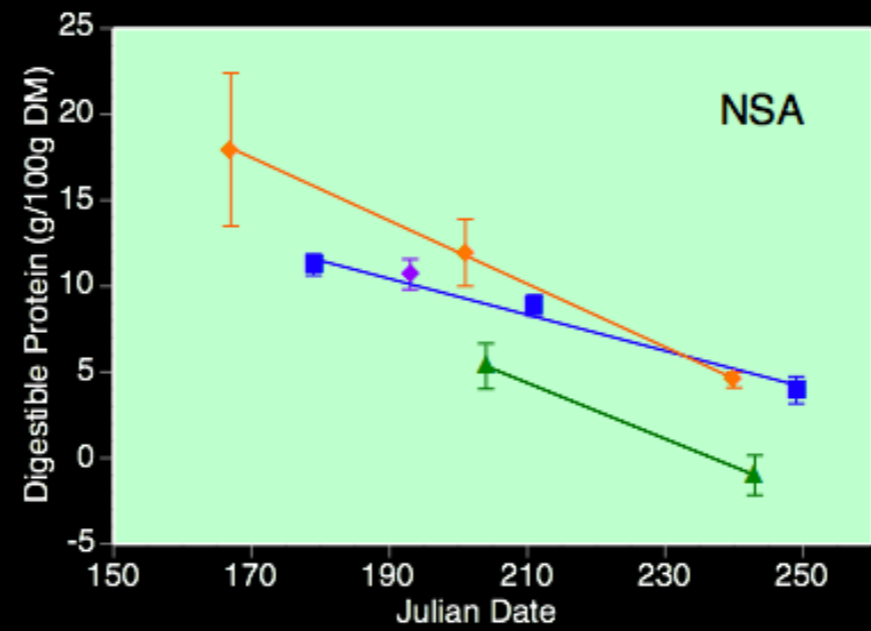
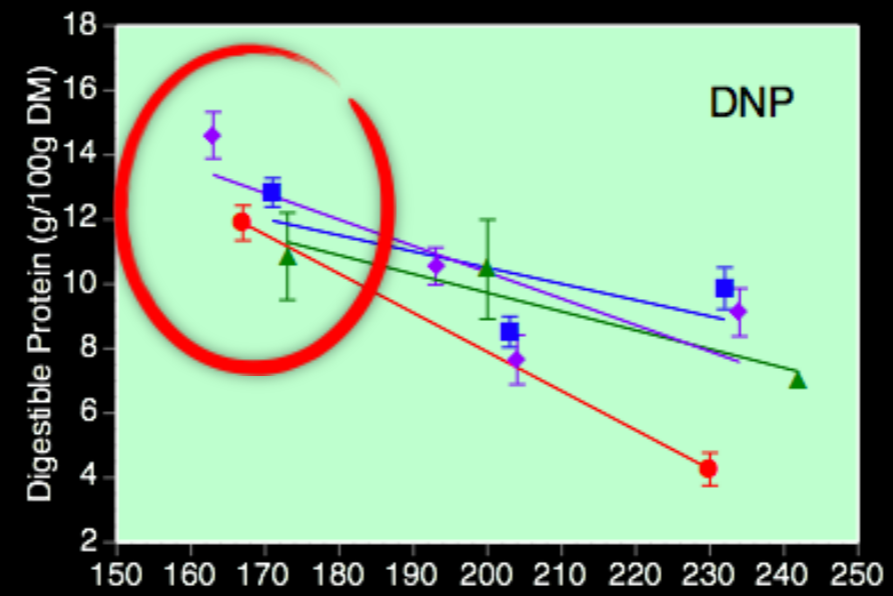


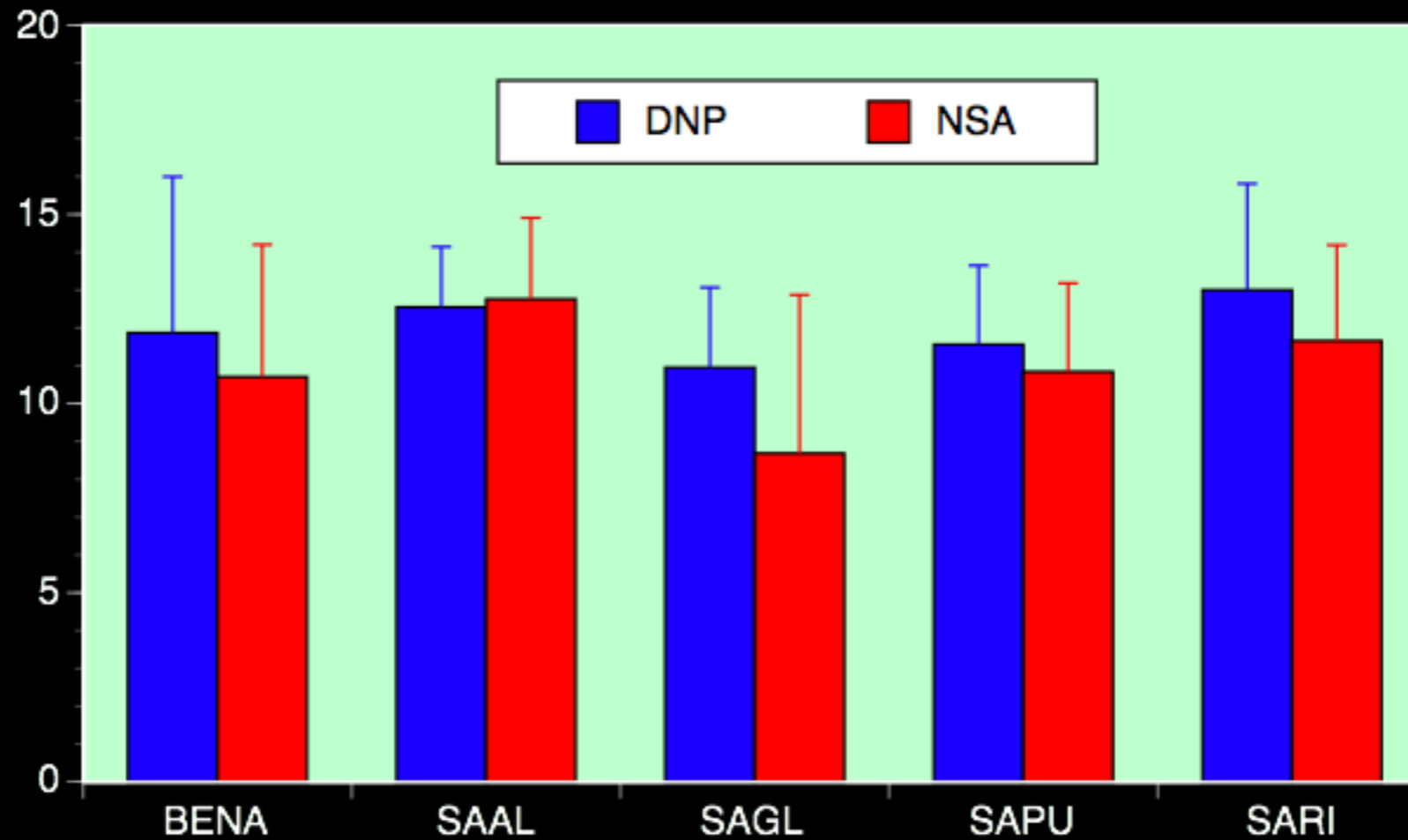




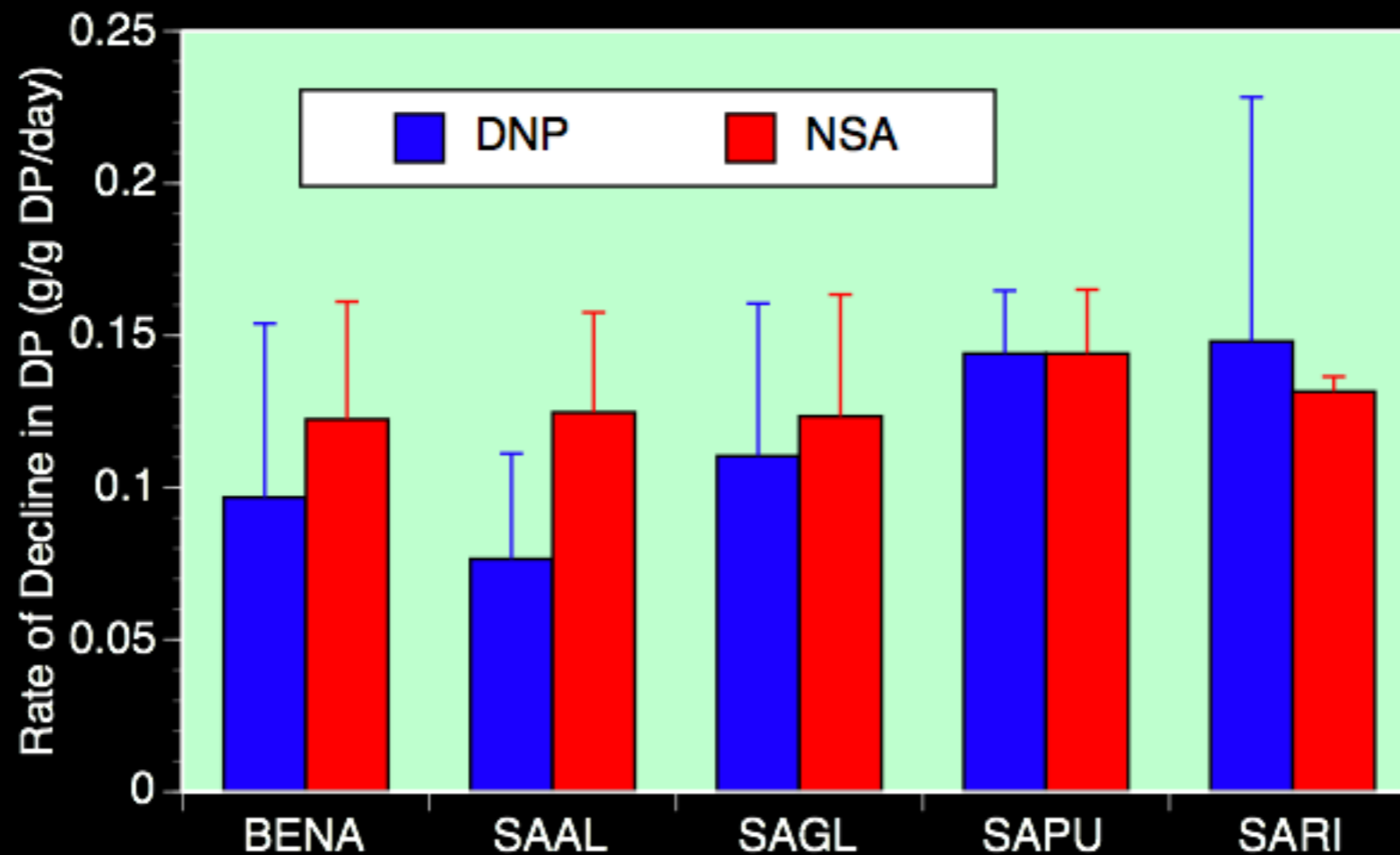








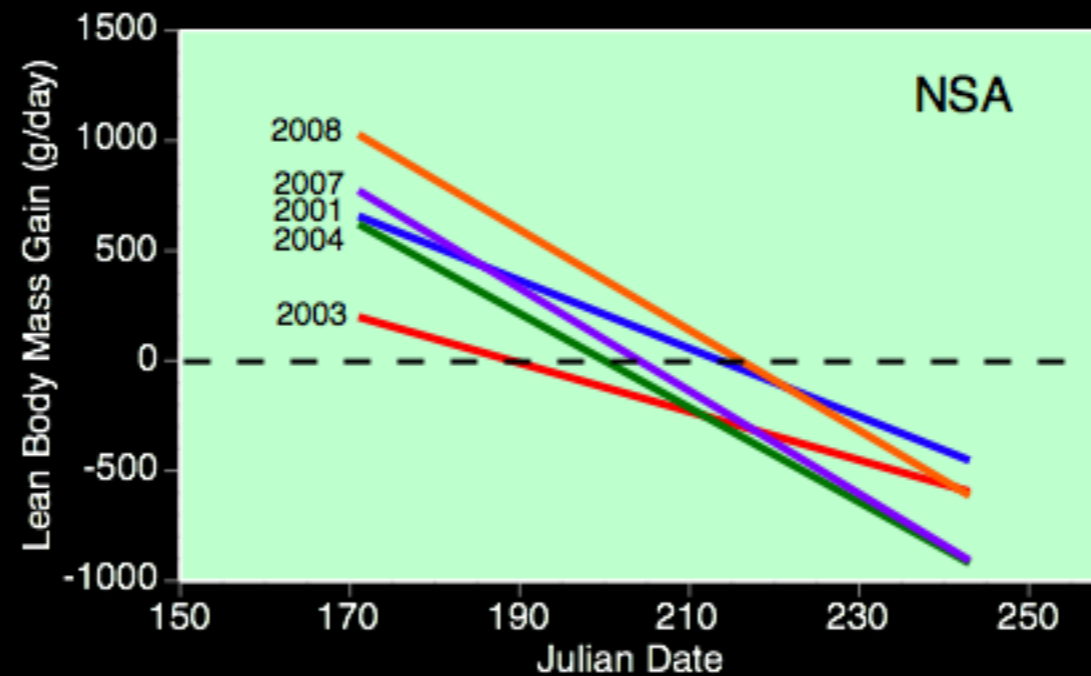
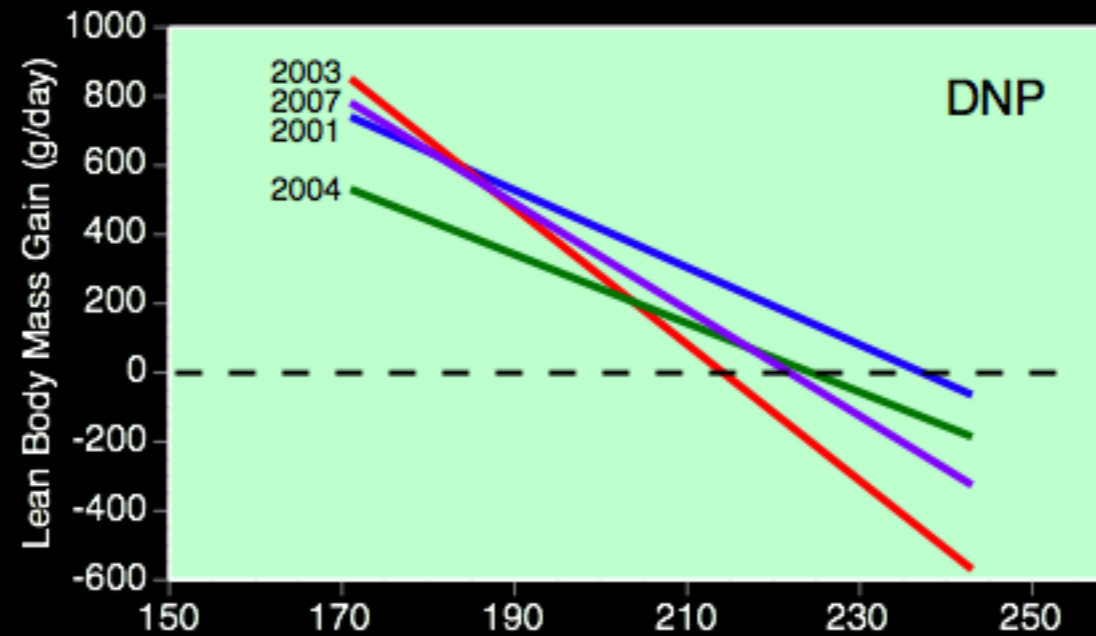
Coefficients of Variation: Range: 13-48%
Average = 25%



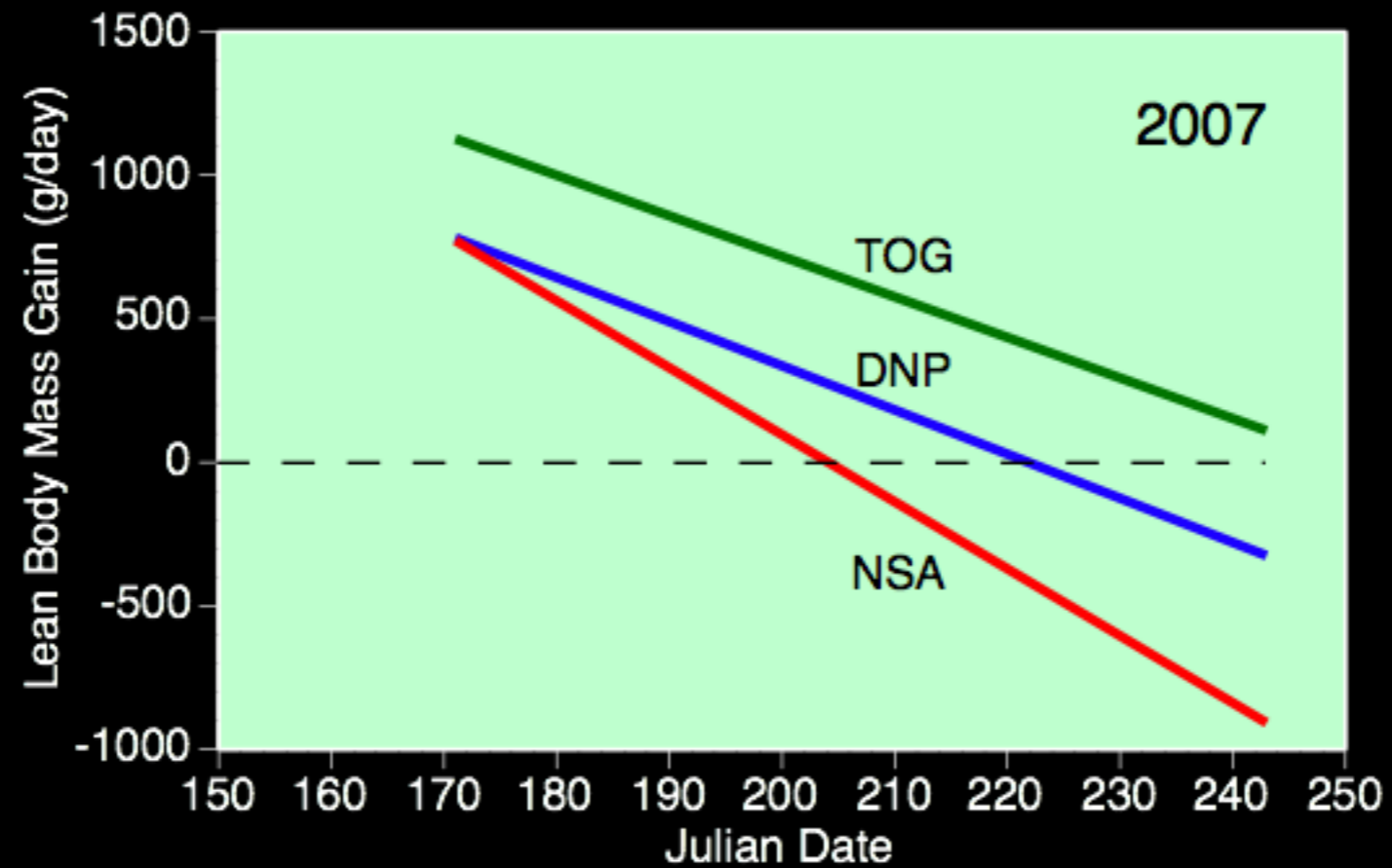
Coefficients of Variation in Slopes: Range: 14-59%
Average = 36%

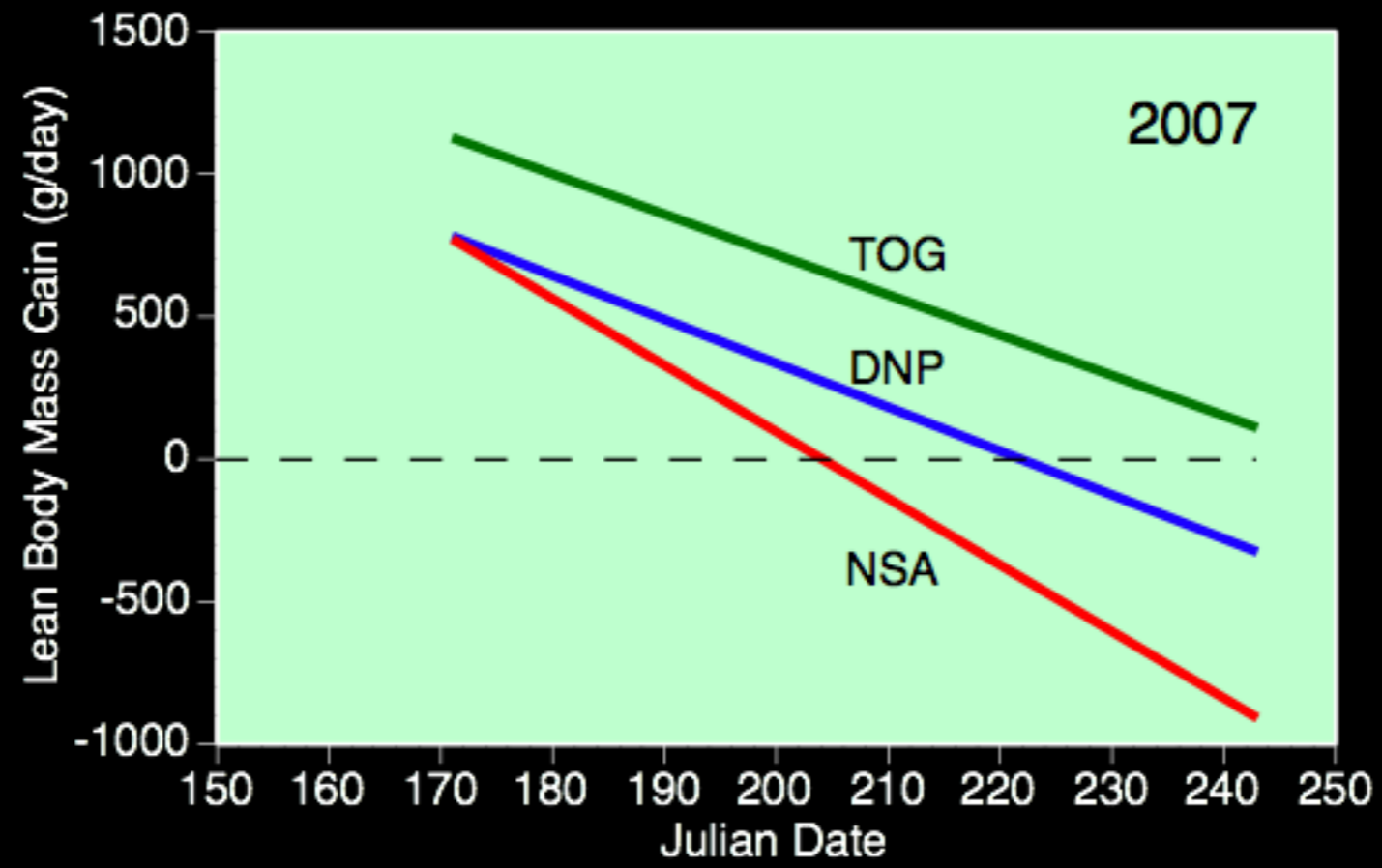


Modeling Lean Body Mass Gain over Summer For a Cow Moose Supporting a Single Calf

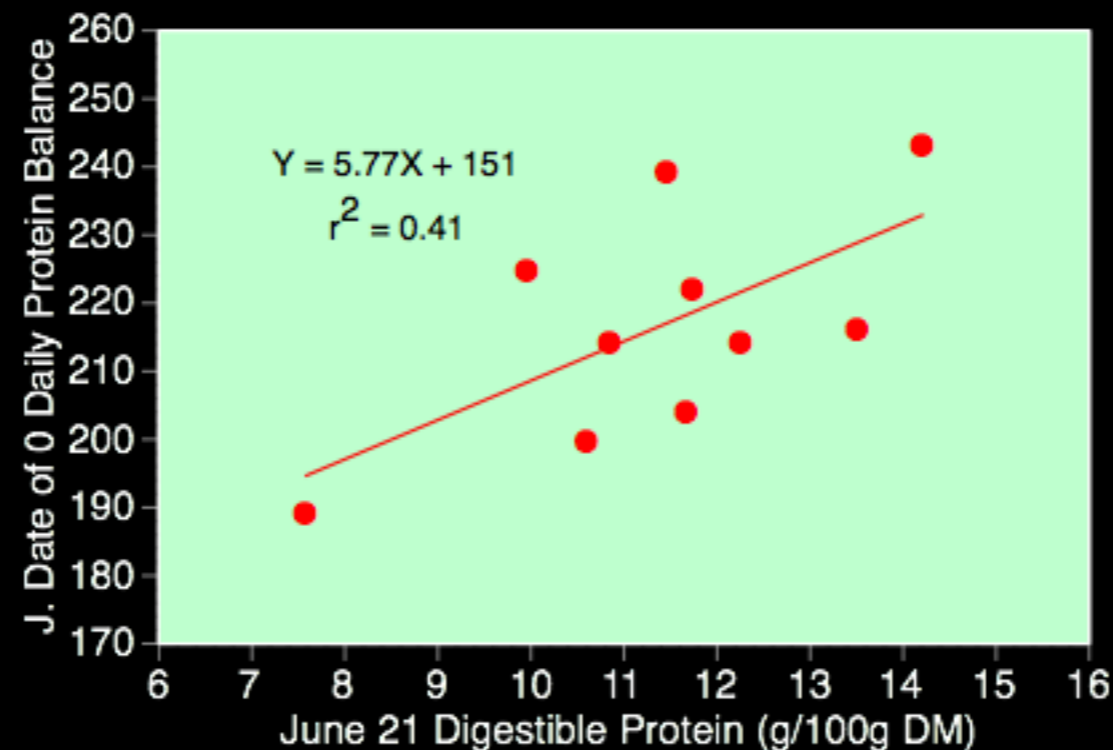
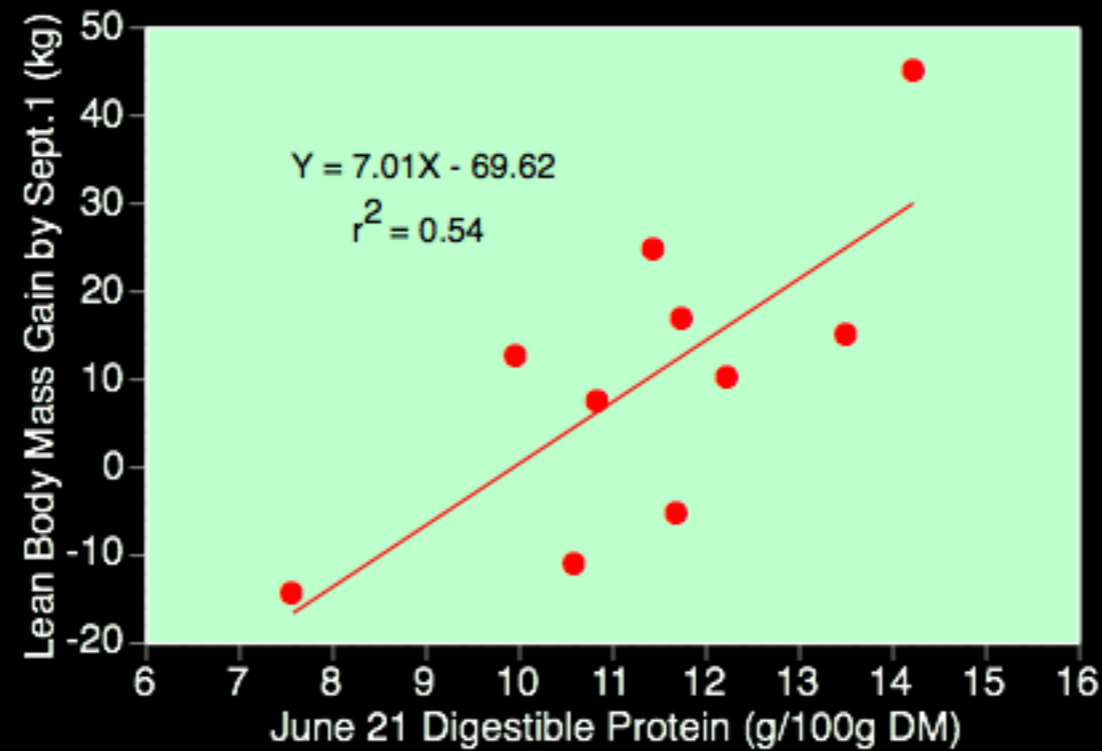


Comparison of LBM gain in three study areas





The relationship between LBM gain and spring Digestible Protein Concentration



Conclusions:

Summer protein balance is a function of date of greenup, peak in protein availability, and chemical phenology of plants across summer

Variability in peak protein availability (CV = 25%) and rate of decline in protein availability over summer (CV = 36%) is high, and is likely to significantly affect reproductive capabilities of moose

The variance in protein phenology in plants is likely due to climactic variability