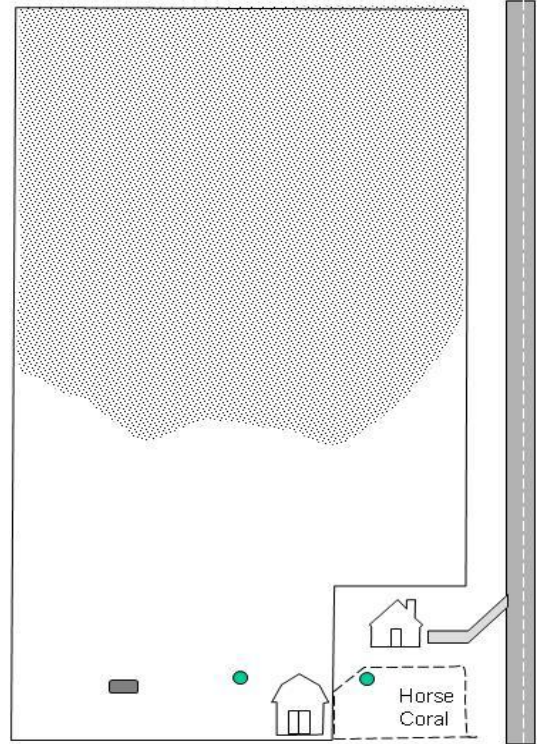


Rangeland Principles

Simple Practice Problems -- Example 1

- A small land owner, near Burley, has a 12 acre pasture on which she grazed 3 horses. The pasture produces about 1,800 pounds/acre of biomass of which about 70% can be harvested as forage (i.e., a 70% proper use factor).
- The horses average 900 pounds each and eat about 3% of their body weight each day.
- The horses have access to the pasture year-round but are provided hay from November through March. Therefore, the grazing season on the pasture is April through October (7 months or 210 days)



Calculate forage supply from pastures and forage demand by horses to determine if pastures are overstocked or understocked.

FORAGE SUPPLY:

$$1,800 \text{ lbs/acre} \times 12 \text{ acres} = 21,600 \text{ total lbs of forage in pasture}$$

$$21,600 \text{ Total lbs} \times 70\% \text{ proper use factor} = 15,120 \text{ Total lbs of usable forage supply.}$$

$$15,120 \text{ lbs usable forage} \div 750 \text{ lbs} = 20.16 \text{ total AUM's usable forage in pasture.}$$

*Remember:
AUM = 750 lbs*

FORAGE DEMAND:

$$900 \text{ lbs/horse} \times 3\% \text{ per day} = 27 \text{ lbs/day} \times 210 \text{ days} = 5,670 \text{ lbs/horse per season.}$$

$$5,670 \text{ lbs of forage/horse} \times 3 \text{ horses} = 17,010 \text{ total lbs of forage demand.}$$

$$17,010 \text{ lbs of forage demand} \div 750 \text{ lbs} = 22.68 \text{ total AUM's of forage demand for horses.}$$

SUMMARY of STOCKING LEVEL:

$$\text{Supply of usable forage} = 15,120 \text{ lbs OR } 20.16 \text{ AUM's}$$

$$\text{Forage demand} = 17,010 \text{ lbs OR } 22.68 \text{ AUM's}$$

$$\text{Current Stocking Rate} = 12 \text{ acres} / 22.68 \text{ AUMs} = 0.53 \text{ acres/AUMs or } 1.9 \text{ AUMs/acre}$$

Would you recommend to increase or decrease stocking?

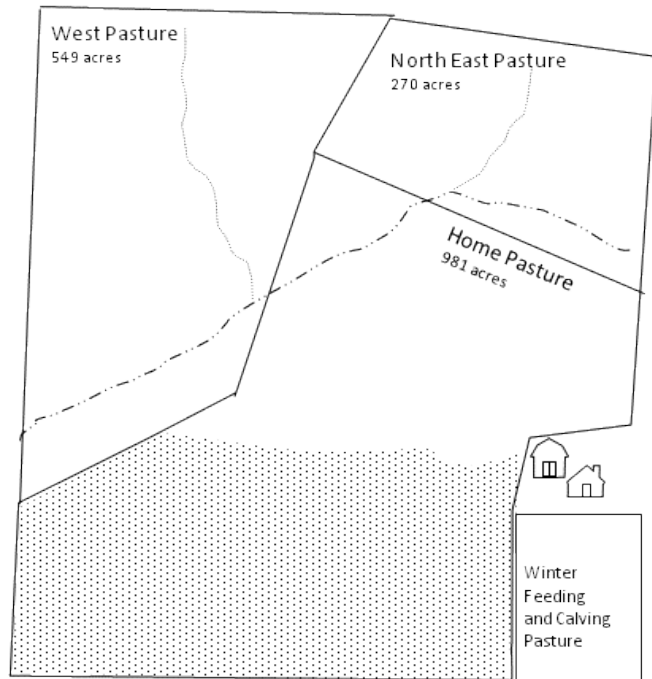
Demand is > Supply so Decrease stocking.

*Forage Demand was calculated
Sell a horse or
buy more hay.*

Rangeland Principles

Simple Practice Problems -- Example 2

This map depicts a ranch near Mountain Home, Idaho that includes three pastures of deeded land grazed in the spring and fall. This ranch also has a grazing permit with the U.S. Forest Service that is grazed in the summer. The ranch is generally managed with a herd of 140 cattle (1.1 AUE or 1,100 pounds) that are held in a Winter Pasture and fed hay through the winter. Both the Home Pasture and the West Pasture have a recommended stocking rate of 1.5 acres/AUM. The North East Pasture produces the same amount of biomass, but is grazed at a lower rate of 2 acres/AUM to preserve riparian habitat.



The pastures that are used in spring or fall vary from year to year and depends on how much forage remains after the spring grazing. Therefore, the appropriate stocking rate is set on total grazing season of about 3 months in the spring and 2 months in the fall.

FORAGE SUPPLY:

West Pasture: $549 \text{ acres} \div 1.5 \text{ acre/AUMs} = 366 \text{ AUMs}$

Home Pasture: $981 \text{ acres} \div 1.5 \text{ acre/AUMs} = 654 \text{ AUMs}$

North East Pasture: $270 \text{ acres} \div 2.0 \text{ acre/AUMs} = 135 \text{ AUMs}$

Total AUM's = $1,155 \text{ AUMs}$ of forage total supply

AUMs of forage supply x 750 lbs/AUM = $866,250 \text{ lbs}$ of total forage supply

FORAGE DEMAND:

140 cattle x 1.1 AUE = 154 AUs x $5 \text{ months} = 770 \text{ AUM's}$

770 AUMs of forage demand x 750 lbs/AUM = $577,500 \text{ lbs}$ of total forage demand

STOCKING LEVEL:

Supply of usable forage = $866,250 \text{ lbs}$ OR $1,155 \text{ AUM's}$

Forage demand = $577,500 \text{ lbs}$ OR 770 AUM's

Current Stocking Rate = $1,800 \text{ acres} / 770 \text{ AUMs} = 2.3 \text{ acres/AUMs}$ or 0.43 AUMs/acre

Acres for whole ranch → *Forage Demand you calculated*

Would you recommend to increase or decrease stocking?

Forage Supply is > Forage Demand so stocking rate can be