Stocking Rate Scenario #1

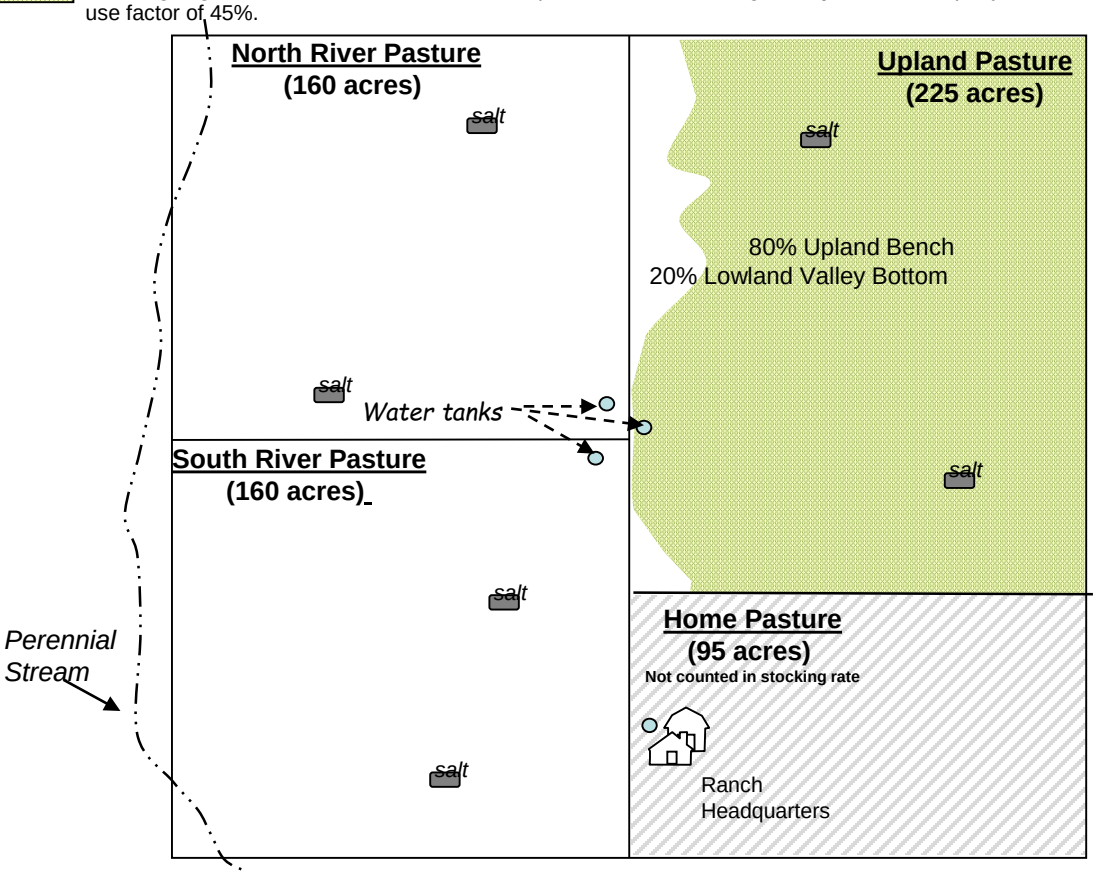
This map depicts the home base for a ranch that is grazed in the spring and early summer and then moved to lease land in late summer. The ranch is generally managed with a herd of 75 cattle (1.2 AUE or 1,200 pounds). The stocking rate for the ranch is based on the Upland and the 2 River Pastures where the herd is grazing from April through June (3 months). Cattle are then moved to pastures leased from the Idaho Department of Lands July until early winter. When the snow gets too deep, cattle are brought to the Home Pasture and fed hay over the winter.

In recent years elk have begun to congregate on these pastures in the spring, Thus, stocking rate must account for about 30 elk (0.6 AUE or about 600 pounds) that stay on these pastures for about one month in the spring.

Calculate the forage supply and demand for cattle and elk while they are on the Upland, North River, and South River Pasture.

Lowland Valley Bottom -
Mostly cheatgrass in a matrix of crested wheatgrass with a healthy stand of willows and sedges along the stream. The site produces about **950 pounds/acre** total herbaceous biomass with a recommended proper use factor of 55%.

Upland Bench-
A relatively gently sloping bench site with mountains above. The site is dominated by native and introduced grasses with shrubs including sagebrush and rabbit brush. Biomass production is on average **825 pounds/acre** per year and a recommended proper use factor of 45%.



Supply of usable forage = _____ pounds OR _____ AUM's

Forage demand = _____ pounds OR _____ AUM's

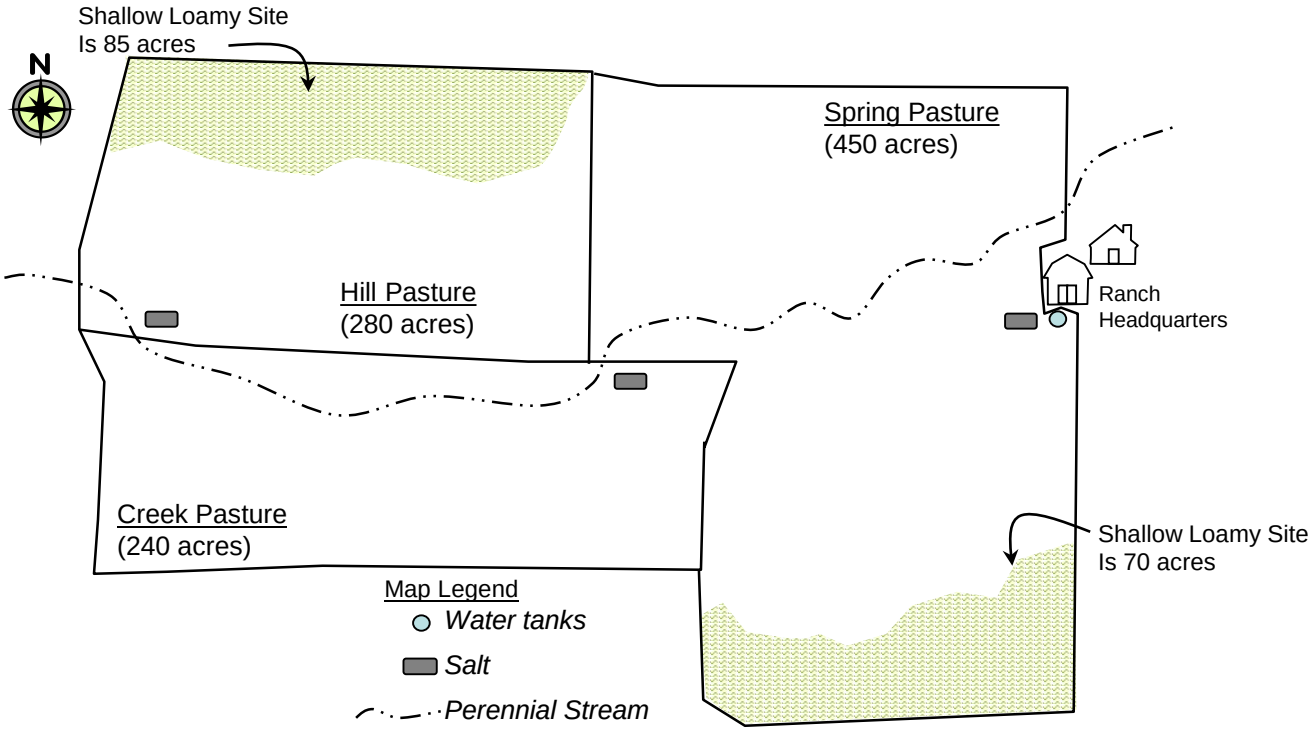
Therefore, for full use:

_____ Decrease, _____ Increase, or _____ Don't Change Stocking Rate

Stocking Rate Scenario #2

The map below depicts a small 970-acre ranch located in central Idaho. The ranch has a perennial stream running through it and the rangeland adjacent to the stream is a gently rolling loamy ecological site. There are ridges composed of a shallow loamy ecological site that flank the north and south borders of the ranch.

The people who own this ranch enjoy raising Scottish Highland cattle, mostly as a hobby. Scottish Highlanders are an ancient breed with cows that weigh about 1,000 pounds at maturity. The ranch is grazed by 46 cows that are a grazed in a deferred rotation method the Spring, Creek, and Hill Pastures. The owners try to keep the cattle out on the range as long as possible. In general, the calves are weaned in early fall and then the cows graze until the snow gets too deep. The cows are then brought back to Ranch Headquarters and fed hay until the grass is tall enough in spring. This generally results in a grazing season from mid-April through mid-December (8 month).



Loamy Ecological Site -
Mostly native grasses with big sagebrush.
Produces about **850 pounds/acre** each year (from 600 to 1,000 lbs/acre depending on precipitation).
On this ranch, this site is generally in good condition. Recommended use of forage on this site is 45%.

Shallow Loamy Ecological Site -
Rocky shallow site, on steep rocky hillsides. Dominated by grasses and shrubs.
Produces on average 500 pounds/acre (ranging from 300 to 700 lbs/acre depending on year).
On this ranch, this site is generally not heavily grazed and is in high condition.
Recommended use for this range site is 40%.

Supply of usable forage = _____ pounds OR _____ AUM's

Forage demand = _____ pounds OR _____ AUM's

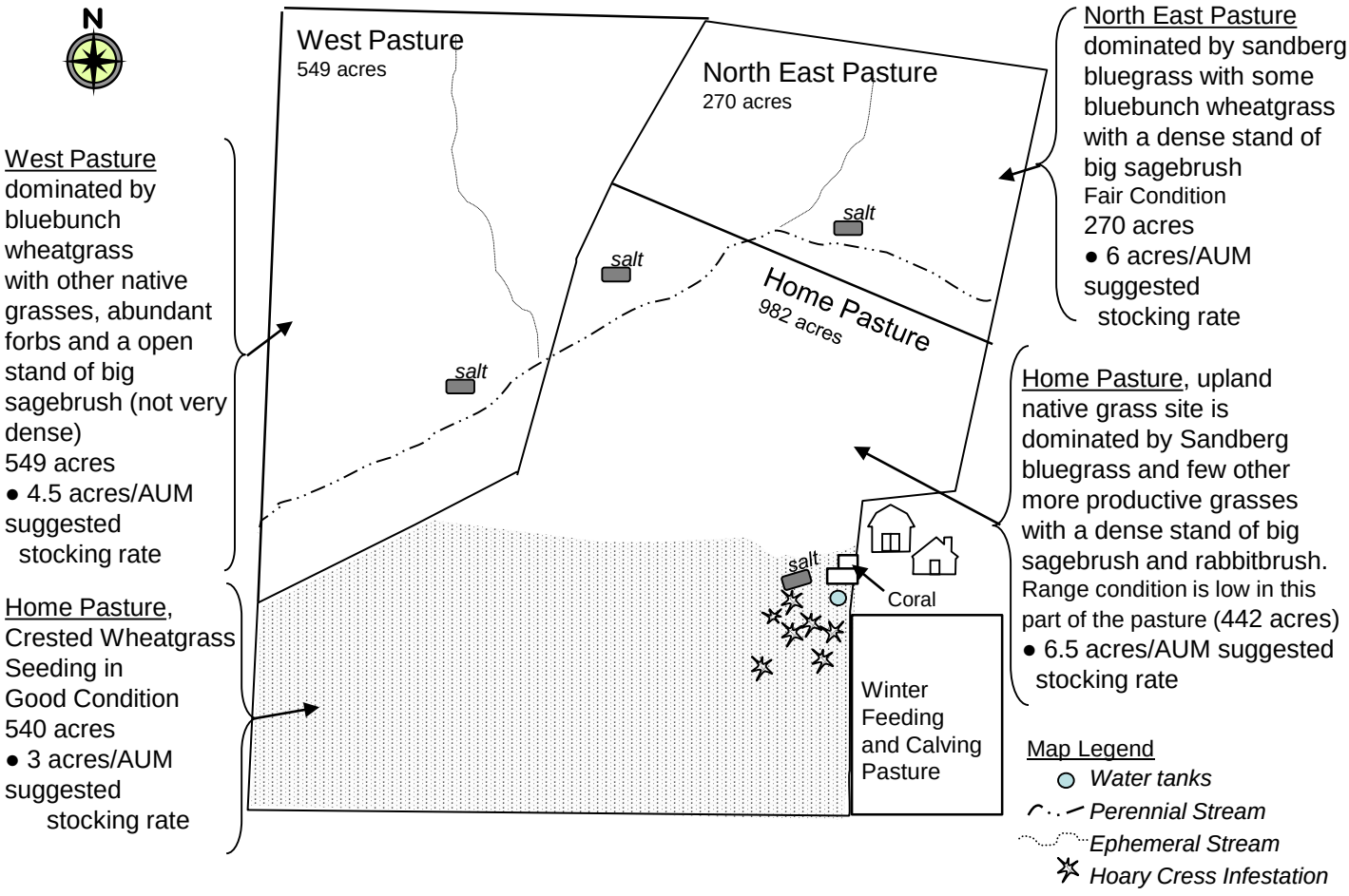
Therefore, for full use:

_____ Decrease, _____ Increase, or _____ Don't Change Stocking Rate

Stocking Rate Scenario #3

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 US Forest Service that is grazed in the summer. The ranch is generally managed with a herd of 75 cattle (1.1 AUE or 1,100 pounds) which are held in the Winter Feeding Pasture and fed hay through the winter. The cows have calves in March while in the Winter Pasture. Bulls are leased and cows are bred while they on the summer Forest Allotments. The basic grazing plan is as follows.

- The Home Pasture is grazed from April 1st through May 31st .
- Then, the cattle are moved to the North East Pastures and graze from June 1st until about June 15th when the cattle are moved to the Forest Service Allotment.
- When the cattle are moved off the Forest Allotment they return to the ranch where the calves are weaned and taken off the ranch. The cows graze the West Pasture for about 2 months (from September 15th through November 15h .
- Then cattle are moved back to the Home Pasture where they graze for about one more month (till December 15th).
- During the winter (December 15 through April 1) cattle are fed hay in a pasture just south of the Ranch Headquarters.



Supply of usable forage = _____ pounds OR _____ AUM's

Forage demand = _____ pounds OR _____ AUM's

Therefore, for full use:

_____ Decrease, _____ Increase, or _____ Don't Change Stocking Rate

Answer to Scenario # 1

*** Home pasture is not included in calculation*

FORAGE SUPPLY

Upland Pasture:
180 ac upland site × 825 lb/ac × 45% = **66,825 lbs**
45 ac lowland site × 950 lb/ac × 55% = **23,513 lbs**
North River Pasture:
160 ac lowland site × 950 lb/ac × 55% = **83,600 lbs**
South River Pasture:
160 ac lowland site × 950 lb/ac × 55% = **83,600 lbs**
Total Forage Available = 257,538 lbs
---------- OR ----------
257,538 ÷ 750 lbs/AUM = **343 AUMS**

FORAGE DEMAND

75 cows × 1.2 AUE = 90 AU × 3 month =270 AUM + 30 elk ×0.6 AUE = 18 AU × 1month = 18 AUM
Total Current Demand = 288 AUM.
---------- OR ----------
1,200 lb cow × 2.5% body weight per day eaten = 30 pounds per day × 75 cows × 90 days = 202,500 lbs
+ 600 lb elk × 2.5% body weight per day eaten = 15 pounds per day × 30 elk × 30 days = 13,500
Total Current Demand = 216,000 lbs

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Supply of usable forage = **257,538** pounds OR **343** AUMs
Forage demand = **216,000** pounds OR **288** AUMs

Therefore, for full use:
_X_ Increase Stocking Rate

Answer to Scenario # 2

FORAGE SUPPLY

Spring Pasture:
Loamy Site =380 ac × 850 lb/ac × 45% = **145,350 lbs**
Shallow Site= 70 ac × 500 lb/ac × 40% = **14,000 lbs**
Hill Pasture:
Loamy Site = 195 ac × 850 lb/ac × 45% =**74,588 lbs**
Shallow Site= 85 ac × 500 lb/ac × 40% = **17,000 lbs**
Creek Pasture:
Loamy site = 240 ac × 850 lb/ac × 45% = **91,800 lbs**
Total Forage Available in pounds = **342,738 lbs**
----------OR----------
Total Forage Available in AUM's = 342,738 lbs ÷ 750 lbs/AUM **= 456 AUMs**

FORAGE DEMAND

46 cows for 8 months = 368 AUMs
**Note: each cow is an Animal Unit because they weigh 1,000 lbs
Total Demand in AUMs= 368 AUM.
----------OR----------
1,000 lb cow × 2.5% body weight per day eaten = 25 pounds per day × 46 cows × 240 days = 276,000 lbs
Total Current Demand in Pounds = 276,000 lbs

****

Supply of usable forage = **342,738** pounds OR **456** AUMs
Forage demand = **276,000** pounds OR **368** AUMs

Therefore, for full use:
_X_ Increase Stocking Rate

Answer to Scenario # 3

FORAGE SUPPLY

Home Pasture:
Native Grass Site = 442 ac ÷ 6.5 ac/AUM = **68 AUM**
Crested Wheatgrass Site = 540 ac ÷ 3 ac/AUM = **180 AUM**
North East Pasture: 270 ac ÷ 6 ac/AUM = **45 AUM**
West Pasture: 549 ac ÷ 4.5 ac/AUM = **122 AUM**
Total Forage Supply = 415 AUM
----------OR----------
Total Forage Available in Pounds =
415 AUM × 750 lbs/AUM **= 311,250 lbs**

FORAGE DEMAND

75 cows * 1.1 AUE = 82.5 Animal Units (AU)
Home Pasture in spring = 82.5 AU × 2 months = **165 AUMs**
North East Pasture = 82.5 AU × ½ months = **41.25 AUMs**
West Pasture = 82.5 AU × 2 months = **165 AUMs**
Home Pasture in Fall = 82.5 AU × 1 months = **82.5 AUMs**
Total Current Demand in AUMs= 454 AUM.
----------OR----------
Total Forage Available in Pounds
= 454 AUM × 750 lbs/AUM **= 340,500 lbs**

Supply of usable forage = **311,250** pounds OR **415** AUMs
Forage demand = **340,500** pounds OR **454** AUMs

Therefore, for full use:
_X_ Decrease Stocking Rate