

ACRES PER PADDOCK “A MUST KNOW”

By

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Rotation Frequency	Grazing Efficiency	Head/ Herd	10	20	30	40	50	60	70	80	90	100	150	200	250	300
			-----acres-----													
3.5	65%	-----	1	2	3	4	5	5.5	6.5	7.5	8.5	9.5	14	19	23	28
7	50%	-----	2.5	5	7	10	12	15	17	19	22	24	36	49	61	73
14	35%	-----	7	14	21	28	35	42	49	56	62	69	104	139	173	208

This table assumes 5 inches of growth at turn in and good to excellent forage weighing 300 pounds per acre inch. Livestock numbers are based on 1,000-pound animals with a calf up to 300 pounds. Consumption rate is based on an average of 2.6 percent of body weight consumed per day throughout the year. If livestock weighs more or less than 1,000 pounds, multiply by a factor (i.e., for 900 lbs. multiply by 0.9; for 1,300 lbs. use 1.3).

Knowing acres per paddock is extremely useful in determining the correct location of fence and water. Paddock size is an estimate that is best kept within 30 percent of recommended size. Recommended paddock size is based on the assumed production information in the table. Even if cross fencing is not done, proper placement of water is important. The most efficient sitting of water troughs is where they can potentially be used for four paddocks in the future. Irregular fields can often be done this way, but require more ingenuity.

When possible, site water on a rise with good drainage and away from drainageways, sinkholes, depressions, wetlands, and other sensitive areas.

Even though the producer may be presently rotating on a longer rotation, it is best to plan for a shorter duration rotation in the future. Water will then be properly located when the new fence and rotation are practiced.

For more specific determination, enter data in “**Cowboy Math**” Excel spreadsheet or use the following formula:

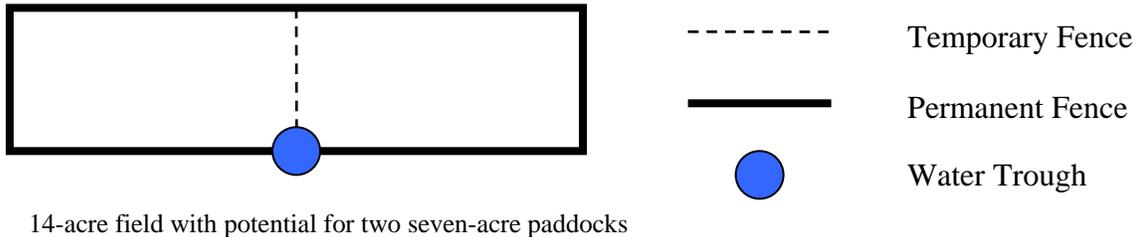
$$\text{Acres/ Paddock} = \frac{(\text{No. Animals}) \times (\text{Animal Wt.}) \times (\text{Intake Rate in \% Body Weight}) \times (\text{Days on Paddock})}{(\text{Inches}) \times (\text{Pounds per Acre Inch}) \times (\% \text{ Grazing Efficiency})}$$

Refer to the attached **Tables 1-4** for reference.

The following examples are given:

Example 1

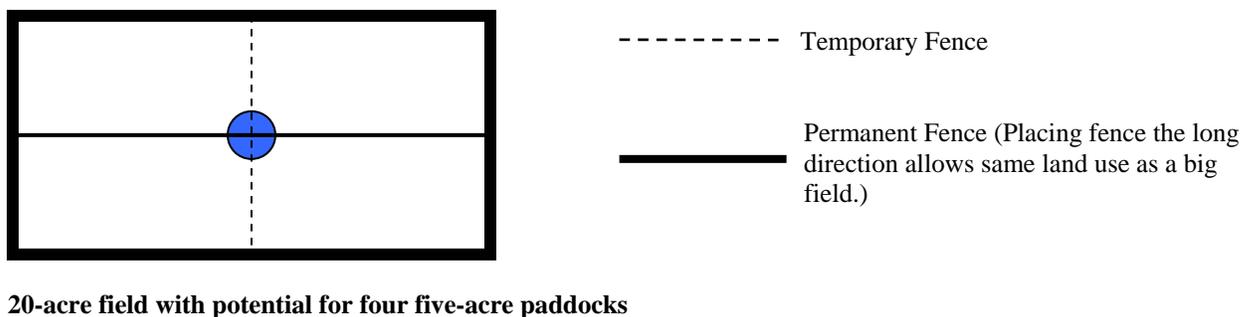
Where should water be located in a 14-acre or smaller field? Given: 50 head cow herd weighing 1,000 pounds; turn cattle in field at 5” height on good forage; rotation is seven (7) days.



Answer: The best location for water would be in the middle of a fence line, because for a 7-day rotation, 12-acre paddocks are recommended. If producer desires a 3.5 day rotation (5-acre paddock), water in the middle of fence allows such a change without additional water. If there are other fields of similar size and production, water could be placed in every other fence line provided that travel distance to water is less than 800’ (water points 1,600’ apart). Inexpensive, quick couplers can be located between permanent watering points offering even more flexibility in the grazing system.

Example 2

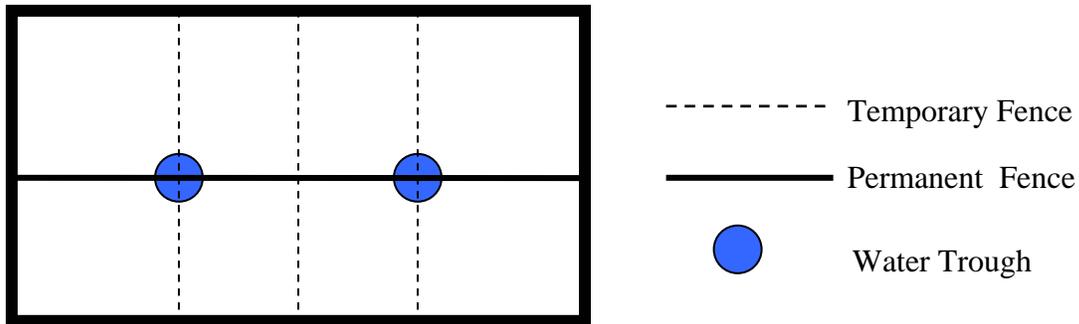
Where should water be located in a 20-acre field? Given: 50 head cow herd weighing 1,000 pounds; turn cattle in field at 5” height on good forage; rotation is seven days.



Answer: The best location for water would be in the middle of the field, because for a 7-day rotation, 12-acre paddocks are recommended. Therefore, when the field is cross fenced, water will be properly located. This location would also allow a 3.5-day rotation if cross fenced. Water could also be placed at one end of the pasture if travel distance of livestock is less than 800’ to water, but it would not be sited well for a 3.5-day rotation, 5-acre paddocks. If possible, it is always best to locate water central for utilization of forage, manure distribution, and cross fencing alternatives in the future.

Example 3

Where should water be located in a 40-acre field? Given: 50-head cow herd weighing 1,000 pounds; turn cattle in field at 5" height on good forage; rotation is seven (7) days.

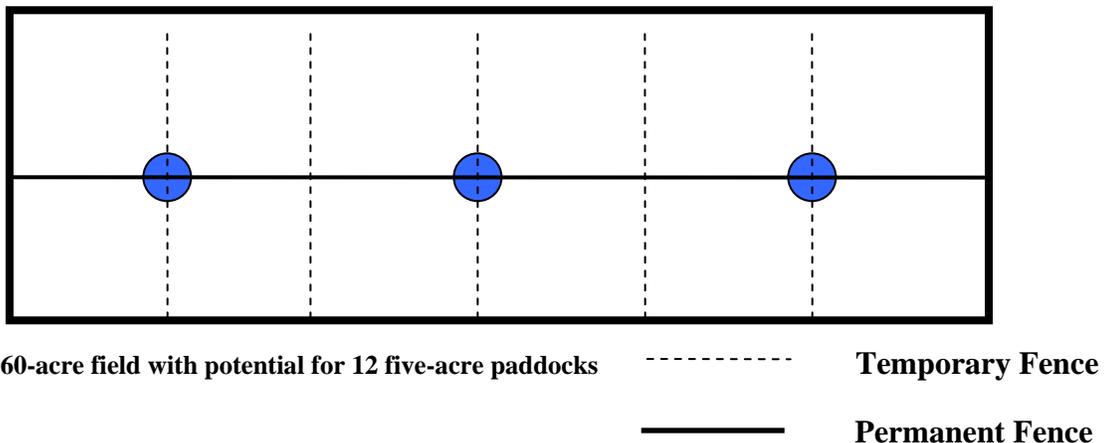


40-acre field with potential for eight 5-acre paddocks

Answer: If the rotation remains a seven-day rotation, the best location for water would be in the middle of the field, because 12-acre paddocks are needed for a 7-day rotation. One cross fence could be permanent and one cross fence temporary. Ultimately, this would provide four 10-acre paddocks. Water should not be placed at one end of the pasture unless it is at both ends of the field. However, water located centrally one-third and two-thirds of the field would allow cross fencing for a 3.5-day rotation. It is best to plan for a shorter rotation.

Example 4

Where should water be located in a 60-acre field or bigger? Given: 50 head cow herd weighing 1,000 pounds; turn cattle in field at 5" height on good forage; rotation is 7 days.



60-acre field with potential for 12 five-acre paddocks

----- Temporary Fence
 _____ Permanent Fence

Answer: The best location for water can be determined by dividing field acres by the ultimate desired acres per paddock (60 by 5 = 12 paddocks), since water can be available for 4 fields $12 / 4 = 3$ quad watering points needed.

Example 5:

EXAMPLE OF FENCING OFF WATER POINT FOR IMPROVED ACCESS AND LIVESTOCK FLOW

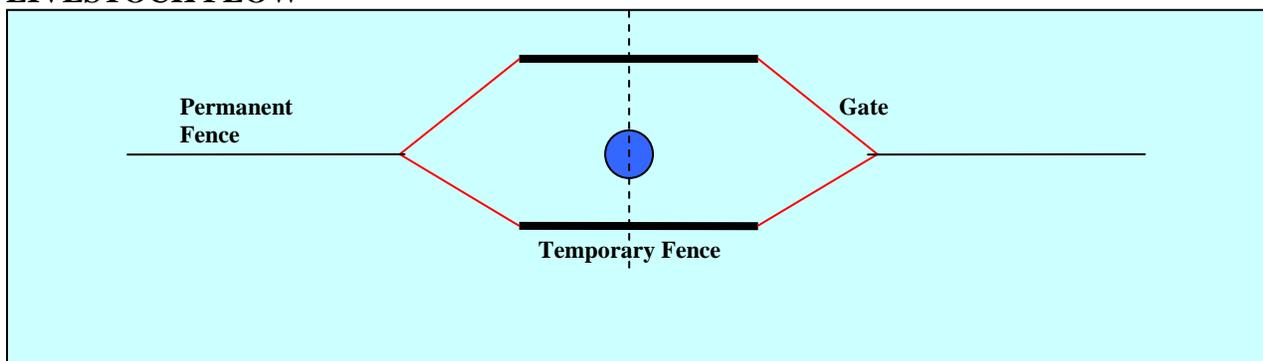


TABLE 1: ROTATION FREQUENCY

Livestock	Daily Forage Intake (% Body Weight)	Recommended Rotation Days	Number of Paddocks
Lactating Dairy	3-4%	0.5-1 day	15-45
Stocker Cattle, Dairy Heifers,	2.5-3.5%	1-3 days	6-45
Beef Cows, Dry Dairy, Swine, or Horse	2-3% (2.6% for year)	3-7 days	3-16
Sheep, Goats	3.5-4 %	3-7 days	3-16

TABLE 2: GRAZING EFFICIENCY

Number of Paddocks	Approximate Days on Each Paddock	Grazing Efficiency Includes Maintaining Minimum Stubble
Continuous	-----	40% or less or (80% over-grazed, low yield)
4 to 6 paddocks	7 to 9 days	40 to 55%
8 to 10 paddocks	4 days	55 to 65%
24 to 45 paddocks	1 day or less	70 to 80%
Hay	-----	70 to 80%

TABLE 3: RECOMMENDED TRAVEL DISTANCE TO WATER		
Lactating Dairy	400-600'	Herds water as a group if travel distance is over 800' or lead cow travels over hill or leaves shade for water.
Beef Cows, Stockers, Horses, Sheep, or Goats	800' 1,000' flat land	

TABLE 4: RECOMMENDED GRAZING HEIGHTS AND REST PERIODS (ULTIMATELY THE ROTATION IS NOT BASED ON DAYS, BUT GRAZING HEIGHT)			
Forage Type	Begin Grazing Height, Inches	End Grazing Height, Inches	Rest Time Days
Tall Fescue, Orchardgrass, and Legume, Annual Ryegrass, or Small Grains	5 to 8"	3 to 4"	14 to 45
Bermudagrass, Crabgrass	5 to 8"	2 to 3"	14 to 45
Alfalfa	12 to 15"	2 to 3"	24 to 32
Sudangrass, Pearl Millet	12 to 18"	4 to 8"	14 to 30
Native Warm Season Grasses	12 to 18"	6 to 8"	30 to 50