2013 Georgia Grazing School:
Selecting the right watering system and sizing the water supply for your grazing system

Watering Options for Your Grazing System

2013 Georgia Grazing School
John W. Worley

Watering Systems
- Provide water in all locations
- Provide adequate watering space
- Provide adequate flow and pressure
- Remember safety and sanitation

“The Creek”
- Fencing across a creek is always a challenge
- Damage to creek banks impair water quality
- “Not enough creeks to go around” for rotational grazing systems

Mechanical Watering Systems
- Advantages
  - Put the water where you want it
  - Improve water quality (for the cows and the neighbors)

Mechanical Watering Systems
- Disadvantages
  - Cost (especially for multiple units)
  - Availability of power for pumping
  - Mud around waterers

Reduce # of Required Waterers
- Place Waterer across fence to provide access from both sides

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**Reduce # of Required Waterers**
- Make sure adequate space is available from either side
  - One bowl for each 15 cows
  - One ft of space for each 10 cows

**Reduce # of Required Waterers**
- Place waterer in an area accessible to more than one paddock
- Could be a lane or a working pen

**Power in Remote Areas**
- Solar Power
  - Best for surface or shallow well
  - Provide extra storage for nights and cloudy days

**Power in Remote Areas**
- Solar Power
  - Provide extra storage for nights and cloudy days
  - 12 gal/day x 2 to 3 days x # of cows
  - Can be in storage tank or watering trough

**Power in Remote Areas**
- Ram Pumps
  - Another alternative where flowing water is present nearby
  - Works on the momentum of flowing water
  - See Publications in notebook

**Mud Around Waterers**

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Control Valve
- Can be under water for freeze protection
- Must be siphon proof
- Must have min. pressure to operate properly

Sizing the supply system
- Need to pump daily need in 4 hours
- 18 gal/day/cow x 100 cows = 1800 gpd
- 1800/4 hrs = 450gph = 7.5 gpm @ operating head (resistance)
- Can reduce pumping rate by increasing storage (especially useful in solar systems)

Sizing the supply system
- Pump – operate efficiently at flow rate and pressure expected
- Pressure Head
  - Elevation Change
    - Water level in well or pond
    - Elevation of drinker or top of storage tank
    - (10 ft = approx. 4.3 psi)
  - Speed of water in pipe
  - Length of pipe
- Limit friction drop to 5 psi
  - Most home systems operate at approx. 40 psi
  - Drinkers need at least 5-10 psi

Sanitation
- Anti-siphoning valves should always be used on livestock waterers to prevent contaminated water from returning to well when pressure is lost.
- Drinkers should be easy to drain and clean

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