SARE Webinar on integration of pasture management and nutrient management

Heavy Use Areas

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Environmental Regulations

- CT 1967 Clean Water Action Plan & 1970 Water Quality Standards
  - Became the model for the …
- Federal Water Pollution Control Act of 1972
  - as amended in 1977 became known as the Clean Water Act (33 U.S.C.1251)
- CAFO General Permit, January 1, 2023
  - DEEP is currently targeting farms > 700 animal units to register & comply
  - Small farms can be designated to register and comply due to a complaint

What is a Heavy Use Area (HUA)?

- An area where too many animals, on too little land, results in total destruction of normal vegetation for extended periods of time /year
  - Animal walk ways
  - Congregation areas near feed or water
  - Congregation areas to escape harsh weather
  - Overstocking to achieve economies of scale
- Goals
  - Keep animals safe, comfortable and productive during inclement weather
  - Protect the resources of the farm & of the state, including pasture quality, air, surface water & ground water

Who documented the first HUA in the US?

- Daniel Boone
  - Where? Salt Lick, Kentucky
  - Species? American Bison
  - How? His diary states “the road was 2-3 feet lower than the surrounding terrain.” The road led the men to a salt lick. Lick meant stream in colonial times. The Bison wintered at the “lick” because the salt kept the water from freezing solid.
    - How salty? He estimated they boiled off 600 gallons of water for 25 lb of salt.
- Another example of a natural HUA
  - Bison over winter near the hot springs and geysers in Yellowstone for the same reason

What do livestock need to survive winter?

- Protection from wind
- Fresh clean water
- Food
- Clean dry hair coat
- Safe footing
- Pre winter animal care considerations
  - Adequate body condition
  - Acclimation period

Protection from wind

- Trees, shelter belts
- Terrain, such as valleys, rolling hills, cliffs, caves
- Constructed – walls, barricades, panels, piles of something
  - Wind protection extends approximately down wind 10 times the height of the barrier
- Wind comes from multiple directions in winter, plan to block the 2 most likely directions
- Provide adequate length, minimize wind coming around a corner

Water & Feed

- Fresh, clean, not frozen
  - Waterers
    - heated or unheated
    - hold some water, or drain back to below frost each time
  - Waterers & feeders
    - How many?
    - Where to locate them?

Clean dry hair coat

- Why clean dry hair?
  - Hair insulates by trapping air
  - Water and dirt reduce trapped air reducing r value
- How to keep animals clean & dry?
  - Bedding, bedding and more bedding
  - Shorter length better
    - Easier to clean wood chips, or leaves than long straw or hay
  - Minimum depth of a wood chip pad 10 inches
  - Natural composting occurs in deeper beds

HUA design considerations

- Size - Area
  - Cattle 100 – 150 square feet per head minimum
- Rain water
  - Divert surface runoff around the HUA
  - Collect, store and land apply contaminated water off HUA
  - Infiltrate as much rain falling on the HUA as possible – minimize runoff
  - Wood chips and other organic materials can trap nutrients for cleaner ground water
  - Drainage may need to be provided and effluent contained for future land application

HUA Design Considerations

- Temporary or permanent
  - Term of use influences the building materials
  - Longer use periods may require impervious surfaces
- To roof or not to roof?
  - No requirement to roof
  - May be cheaper to roof than to collect and contain runoff


NEW HOLLAND

Questions?

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