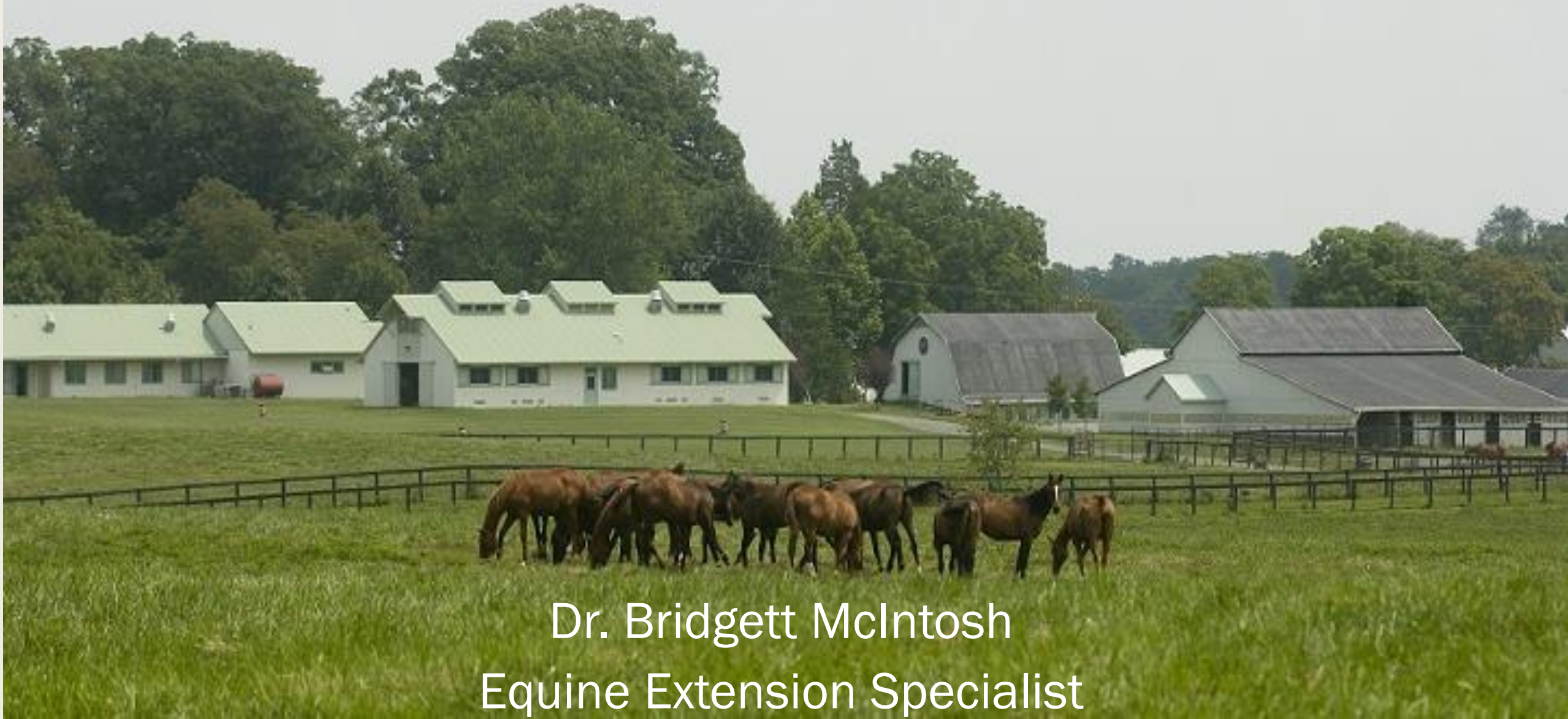
HORSE FARM MANAGEMENT PRACTICES: PROTECTING WATER AND HEALING THE ENVIRONMENT



Dr. Bridgett McIntosh
Equine Extension Specialist

VirginiaTech
College of Agriculture and Life Sciences

Understanding the connection between our horses, livestock, land, and water, is the key to conservation and stewardship.

HORSES & LAND GO HAND IN HAND

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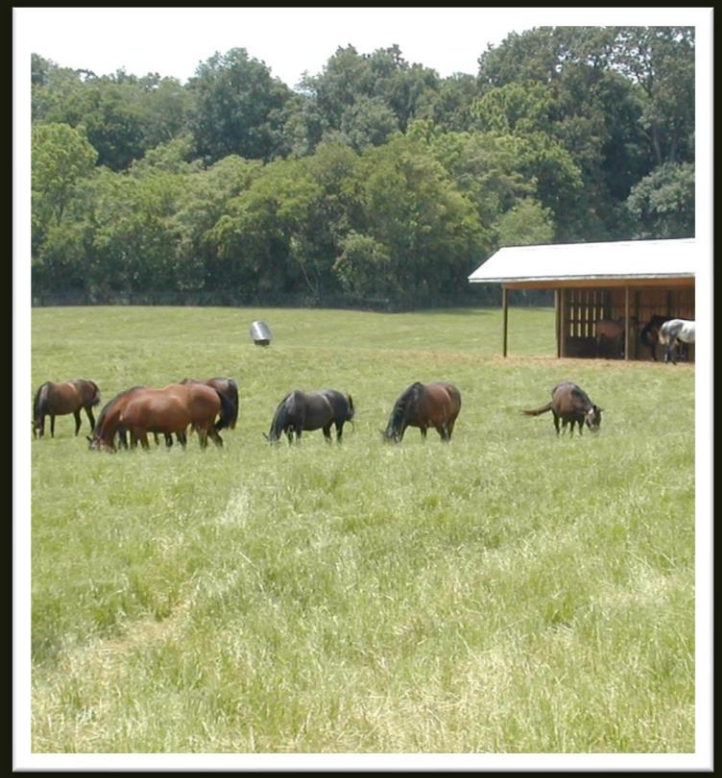
Forage is foundation of equine diet

Horses need 1.5% to 3% of their body weight in forage each day:

17 to 33 lb/day for the average horse

Graze 14-18 hrs/day

Travel 10 miles/day



Horse farms protect open space which is being lost to development

Regardless of size, Farms and “Farmettes” play a role in land stewardship

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Management Issues

- Overstocking
- Overgrazing
- Manure management
- Mud management

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Grazing issues

- Selective grazers= uneven grazing
- Biting top grazers = leaf removal
- Large & heavy = soil compaction & trampling
- Manure distribution = uneven grazing & parasites

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CONSERVATION PRACTICES CRITICAL TO HORSE AND ENVIRONMENTAL HEALTH

Poorly managed pastures are a source of sediment caused by erosion, as well as nutrients and pathogen indicators (*E. coli*) lost from animal waste from pastures and improper storage

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HORSE FARMS & NON POINT SOURCE POLLUTION

Caused by rainfall or snowmelt moving over and through the ground where pollutants are picked up and carried away to lakes, rivers, wetlands, coastal waters, and ground waters

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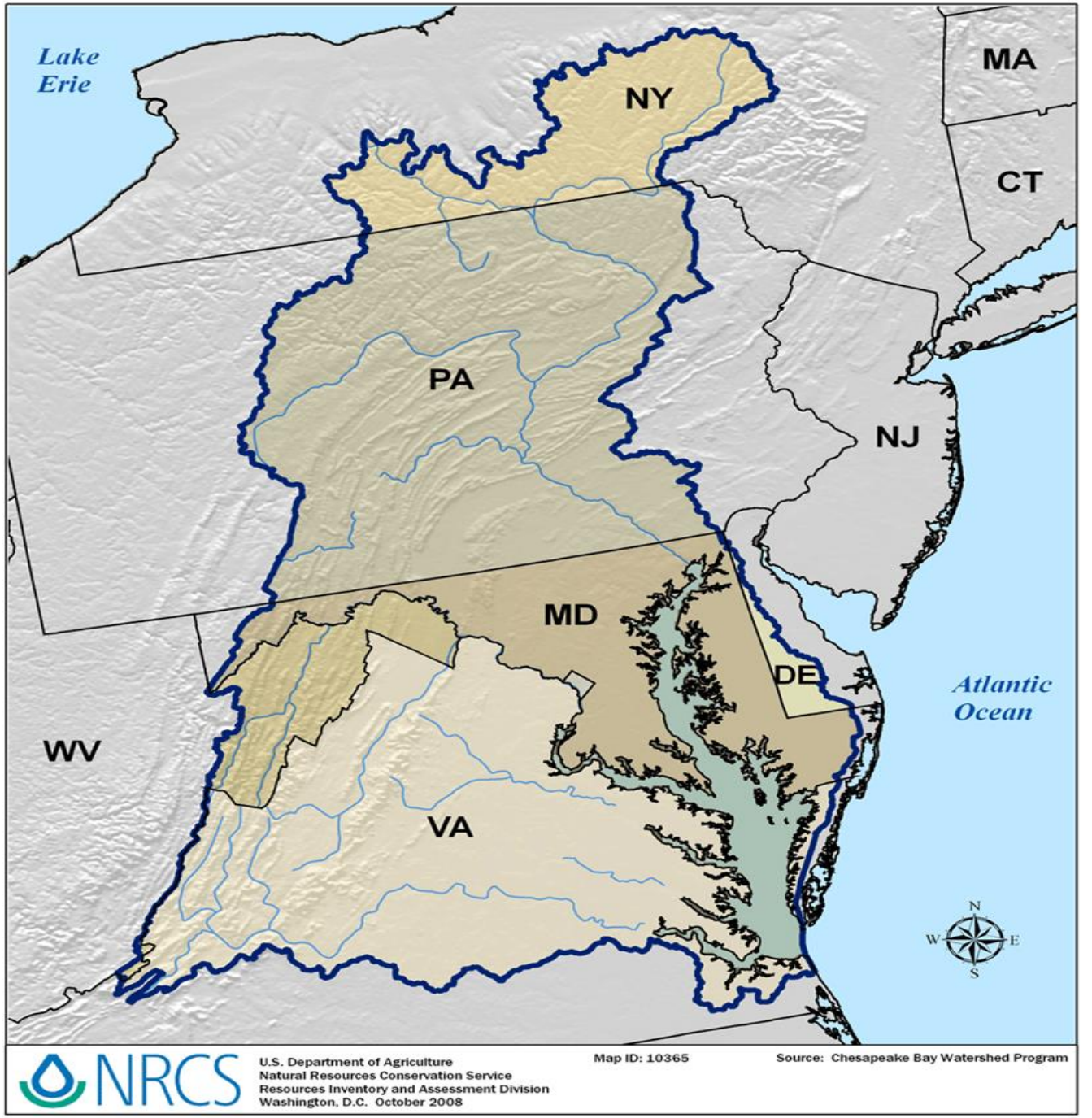
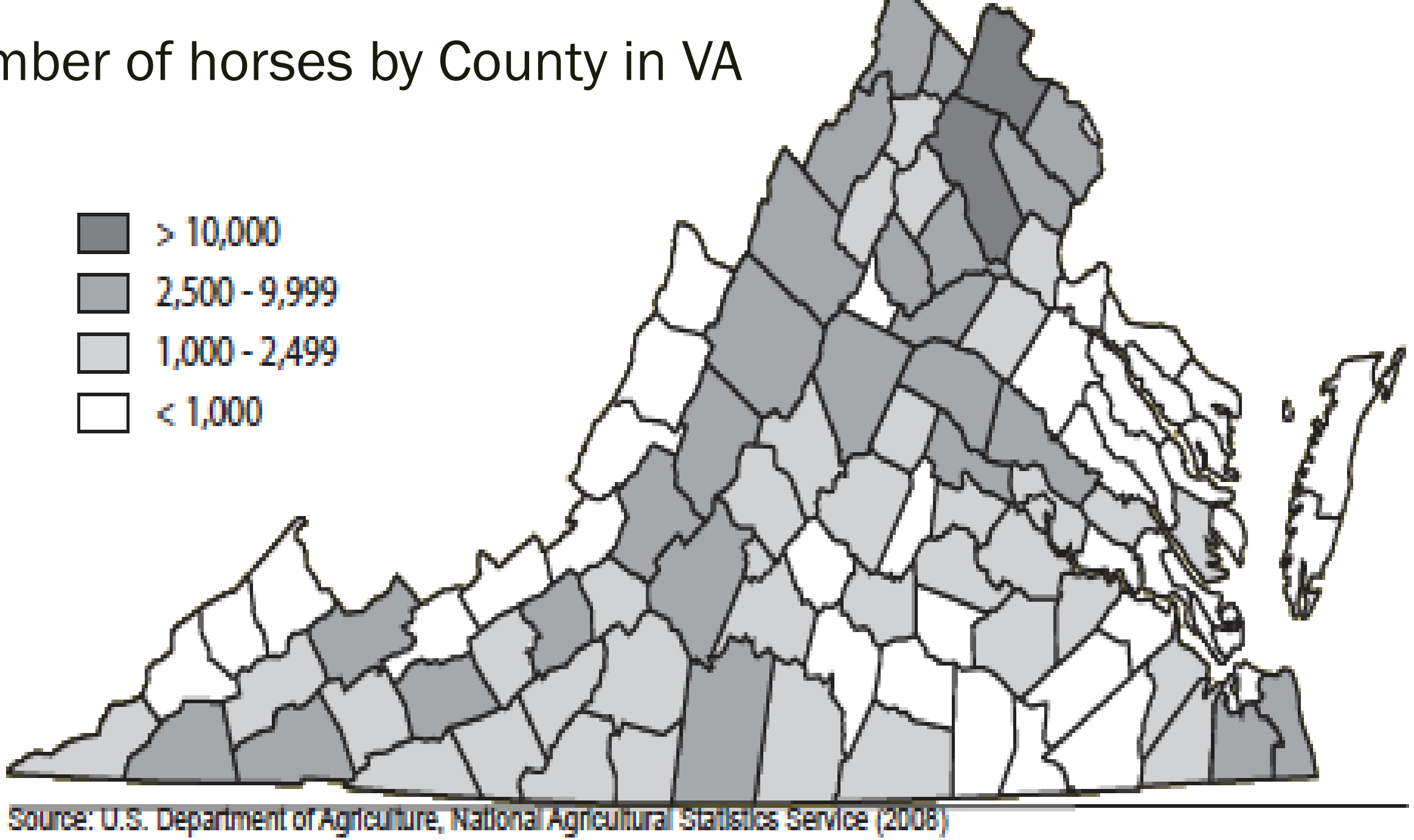
CHESAPEAKE BAY IMPACTED BY AGRICULTURAL PRACTICES INCLUDING HORSE FARMS



Number of horses by County in VA



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Sediment from erosion

- Loose particles of sand, silt and clay.
- In excess amounts, sediment can cloud the waters of the Bay and its tributaries, harming underwater grasses, fish and shellfish.


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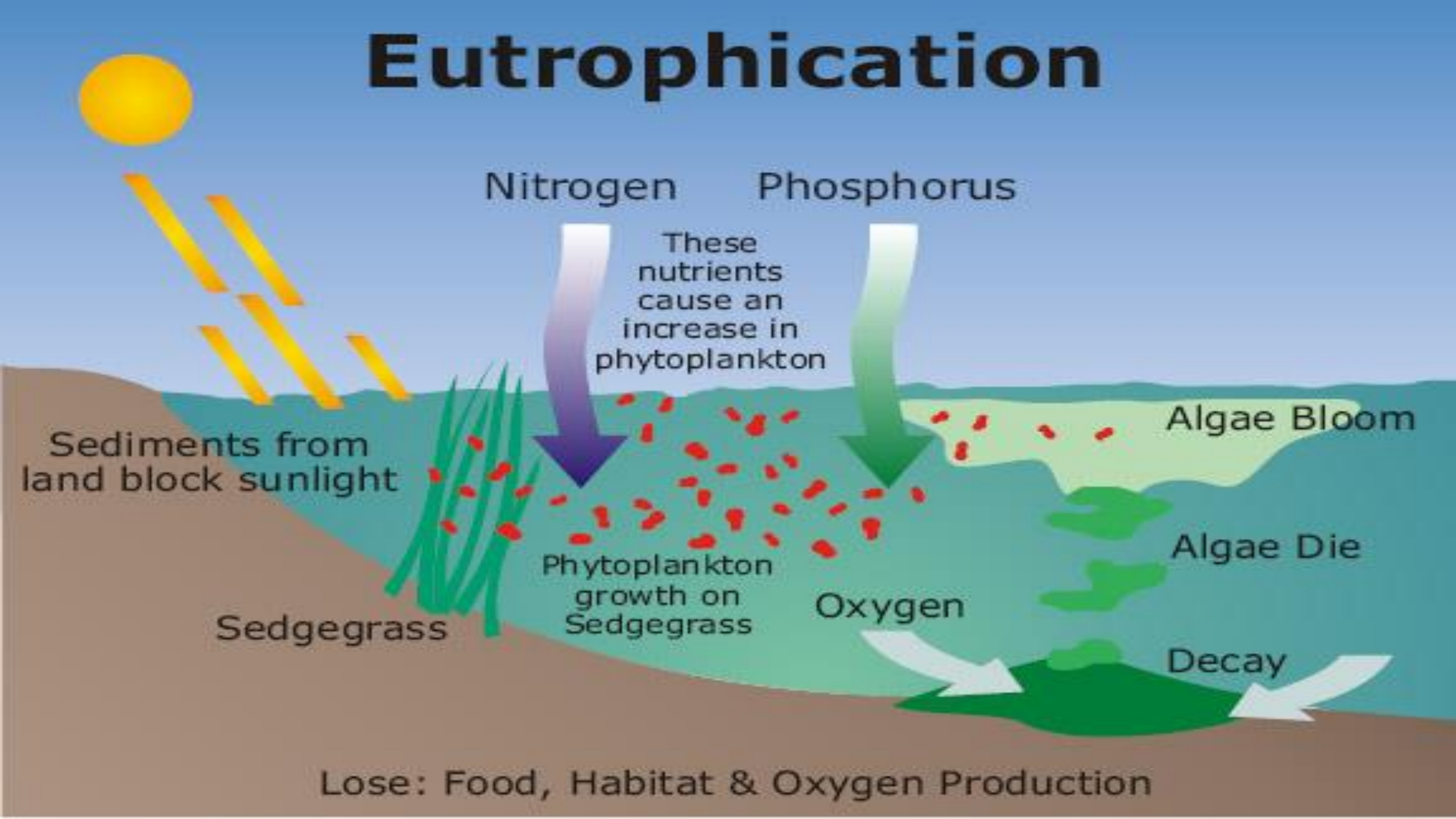
Nutrient pollution from waste & fertilizer

- Fertilizers and manure, are high in nitrogen (N) and phosphorus (P)
- Primary sources of nutrient pollution
- Excess nutrients impact water quality when it rains or when water and soil containing nitrogen and phosphorus wash into nearby waters or leach into ground waters


Eutrophication
Nitrogen
Phosphorus
These nutrients cause an increase in phytoplankton
Sediments from land block sunlight
Algae Bloom
Algae Die
Phytoplankton growth on Sedgegrass
Oxygen
Sedgegrass
Decay
Lose: Food, Habitat & Oxygen Production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Pathogens from animal waste

- E. coli in water is a strong indication of animal waste contamination

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HORSE FARMS CAN BE GOOD STEWARDS OF THE LAND AND PROTECT WATER QUALITY

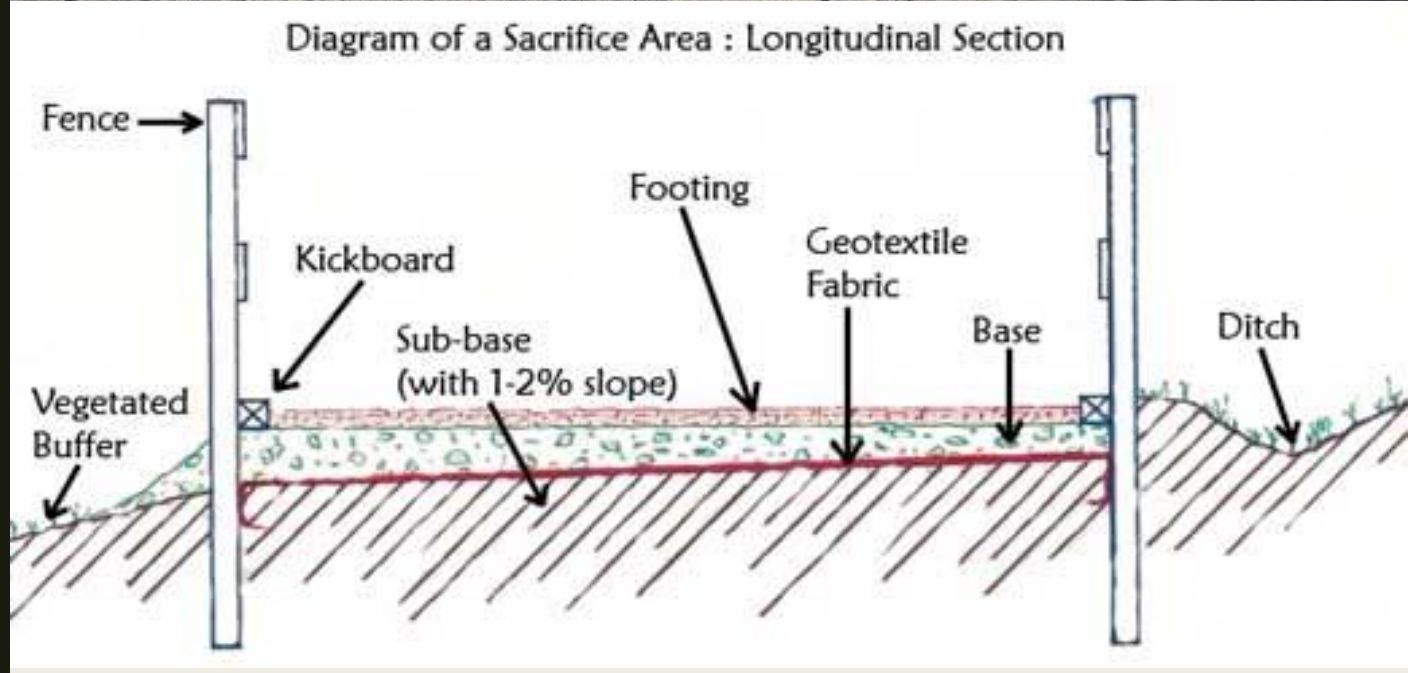
Simple, Everyday Best Management Practices (BMPs)

BMP: Pasture Management

- Soil test & fertilize accordingly
- Grazing management
  - *Maintain forage 4’6” min*
  - *Rotational grazing*
    - REST & RECOVER!
- Select appropriate forage species
- Renovate as needed

BMP: Install heavy use areas or dry lots

- Mud Management
- High stocking rates
- Wet conditions
- Drought or slow forage growth
- Restrict grazing
  - *Disease avoidance*
  - *Weight loss*
- 500 ft^2 per horse



BMP: Install vegetative or riparian buffers & fence off streams

- Stabilize stream bank
- Filter nutrients

BMP: Manure Management

- Horses produces 30-50 lbs manure per day
- 10 tons or 12 cubic yards per year
- 9.1 tons of manure per year containing
  - *11 lb N, 2 lb P, 8 lb K*
- Parasites transmitted through manure
- Pasture is source of greatest risk of infection
- Compost to kills weed seeds & parasites
- Land apply according to manure and soil test where approriate
- Dragging??? Consider spreading of parasites

Composting Manure

- 1 Horse produces .81 ft^3 manure or 1.6-2.4 ft^3 with bedding
  - *2 Horses for 4 months:*
- Two 12 x 12 x 5 ft bins
  - *12 horses for 2 months:*
- Three 20 x 20 x 5 ft bins
- Turn every 2-3 weeks (oxygen)
- Temp should reach 130-160°F
- Complete after 1-4 months
- No odor, moist but not wet
- Analyze for nutrient content
- Apply to land according to soil test
- READ HERBICIDE LABELS IF USED

Dr. Bridgett McIntosh email: bmcintosh@vt.edu phone: 540.687.3521 ext22