



PRINCE WILLIAM
Soil and Water
Conservation
DISTRICT

13061 Fitzwater Drive, Nokesville, VA 20181
703.594.3621 www.pswcd.org

December 2009

Public and Private Partnerships for a cleaner Chesapeake Bay: Horse Farm is under construction!

Project Background:

More than 20 partners are assisting with the Chesapeake Bay-Friendly Horse Farm Project. The project proposal was developed by the [Prince William Soil and Water Conservation District \(PWSWCD\)](#) and submitted to the [Virginia Department of Conservation and Recreation](#) with a request for approximately \$125,000 in funding. An equal amount is being contributed by PWSWCD and its' partners in direct funding, staff and volunteer time, products, and services.

The goal of the Horse Farm Project is to address common environmental issues found on horse properties that contain waterways, wetlands, or soils that may leach pollutants into groundwater. Water pollution from horse operations can commonly come from the mismanagement of mud, manure and pastures. The project seeks to identify and utilize both tested and innovative management techniques that effectively decrease water pollution. An important goal of the project is to find solutions that not only work well but are also cost-effective. Horse operations in our area, and many parts of Virginia, are not eligible for the same financial incentives, for conservation-oriented improvements, that are available for production agriculture. The PWSWCD seeks to find both innovative and commonsense solutions and then to motivate horse-keepers to make positive changes to their land management without relying upon the government for financial assistance.

Horse operations in [Prince William County](#) are typically small in size often just five to ten acre properties with only a portion of that dedicated to horse-keeping. If allowed 24-hour access to pastures, horses will naturally graze 18 hours each day. Too many horses on too few acres can quickly denude green meadows. A high stocking rate, and its' affect on the land, can threaten the health of the horses and the environment and create aesthetics that strain relationships with neighbors.

In a rainstorm exposed soil, horse manure, fertilizers, and pesticides from mismanaged pastures can wash across the land, downhill, and into our waterways. All the local streams eventually lead to the Potomac River and downstream to the [Chesapeake Bay](#). Soil sediment and excess nutrients from fertilizers and animal manure harm the Chesapeake Bay. Sediment can make the water cloudy, appearing like chocolate milk rather than clear. The sediment prevents sunlight from reaching underwater grasses and can also clog fish gills. Excess nutrients over-feed algae causing algal blooms. When the algae naturally die back, the decomposition process steals oxygen away from fish and other living organisms in the water, suffocating them.

Horse-keepers can use basic principals called Best Management Practices (BMPs) so that they don't hurt the environment. Those BMPs will be installed and demonstrated by making improvements to a local horse operation that is currently in poor condition and may be a source of pollution. Planned improvements to this soon to be "model horse property " include the installation of fencing to exclude the horses from a 25 foot buffer/filter area alongside the stream, waterlines and troughs to provide an alternate source of drinking water for the horses, pasture seeding and renovation to discourage weed growth, interior fencing to allow for rotational grazing, manure storage that allows for properly timed application or removal for off-farm use, and the installation of confinement paddocks for non-pasture turnout.

Bluestone gravel dust will be used to create the confinement paddocks also known by the technical term "sacrifice area." A sacrifice area is one area of the pasture system on which groundcover or grass is sacrificed in order to keep the rest of the pastures healthy and green. One of multiple pastures may be grazed when grasses are at least 4 inches tall and the ground is dry. Rotational grazing allows non-grazed pastures time to rest and re-grow. During wet weather, periods of drought, the winter months, or any time all the pastures need to rest, the horses are moved, or rotated, into the sacrifice area.

A convenient location for the sacrifice area(s) is often right next to the barn. In the area adjacent to the barn, organic "muck" from manure, uneaten hay, or excess stall bedding can typically build up over time. The organic material acts as a sponge and holds water after a rain, often for an extended period of time. The wet area is slippery for the horses and the owners working in the paddock. Horses kept in muddy conditions can develop fungal and bacterial infections on their skin and in their feet. They can also slip, fall, or have their horseshoes pulled off by the suction, damaging their hooves. During the construction process the sacrifice area is prepared by first removing any organic material from the area.

After the muck is removed from the paddock it will be resurfaced with a few inches of bluestone dust gravel. The gravel dust becomes a clean, safe, all-weather footing. The horses can be confined as needed, especially in wet weather when their hooves would tear and damage the pasture grasses. The horse owner must regularly remove any new manure or other organic material from the paddock to keep it mud and muck-free.

Sacrifice areas are critical for proper land management on small acreage horse properties. Visually the improvement to the property aesthetics is very positive and when installed as part of a rotational grazing system it becomes very chore-efficient for the horse-keeper. The PWSWCD staff believes that if every horse-keeper installed, and properly utilized, a sacrifice area, the benefits to the environment would be substantial. Sacrifice areas allow horse operators to keep pastures green. Allowing pastures to grow tall, healthy grasses with deep root systems helps slow the downhill travel of rainwater and allows rainwater to soak into the ground rather than run off, potentially carrying pollutants. The grasses also form a dense sod that resists erosion.

The horse property selected to participate in the project is on a highly visible corner in Gainesville, VA at the intersection of Catharpin Road and Route 234/Sudley Road. The farm is privately owned. Construction to "remodel" Oakwood Farm will begin in March. After improvements have been completed the farm will be used for education, demonstration, and additional research for 10 years. The owner, Edith Kennedy, agrees to maintain the new practices and utilize the prescribed management techniques. The owner is also asked to share feedback with the PWSWCD and maintain ongoing communication with our conservationists. Tours of the model farm are available, by appointment only, through the Prince William SWCD. To learn more about the project or to schedule a tour, please contact [Kate Norris](#), District Manager with PWSWCD at (703) 594-3621.