

SHENANDOAH COUNTY  
VIRGINIA

# Let Them Eat GRASS

## Grazing in the Chesapeake Bay Watershed

Farmers play a critical role in reducing pollution that contributes to poor water quality in local streams, rivers, and the Chesapeake Bay. The same practices that keep fertilizers, manure, and sediment out of the water can also increase profitability, improve soil health, increase resilience to severe weather, and help fight global climate change, benefiting both farmers and environmental restoration efforts.

One of the farming practices most effective for achieving these multiple benefits is rotational grazing. By frequently moving livestock between grass pastures and allowing plants time to regenerate, this form of grazing helps build healthy soils and plants that act like a sponge to soak up rainfall, trap nutrients and soil on the land, require less fertilizer, and store carbon-rich organic material in the ground.

With support from the federal Natural Resources Conservation Service (NRCS), the Chesapeake Bay Foundation has focused on increasing adoption of rotational grazing in Virginia, Maryland, and Pennsylvania by enhancing outreach efforts, leveraging private funding to assist farmers, and quantifying some of the environmental benefits on farms across the Bay watershed.



CHESAPEAKE BAY  
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*Saving a National Treasure*

CASE STUDY



# Funkhouser Farm

**FARM:** Funkhouser Farm is a 91-acre cow-calf operation in Virginia's Shenandoah Valley.

**OWNERS:** Karla Funkhouser

**LOCATION:** Shenandoah County, Virginia

**BASELINE PRACTICES:** About half of the property was dedicated to continuous grazing for the 27 cow/calf pairs and the other half was grown in hay and then grazed.

**ON-FARM CHANGES:** With assistance from CBF's Carbon Reduction Fund, Karla was able to install a water hydrant system that allowed her to implement a rotational grazing plan that included the current pasture and hayfield. She also plans to increase her herd slightly to 30 cow-calf pairs.



## Environmental benefits of switching to rotational grazing:



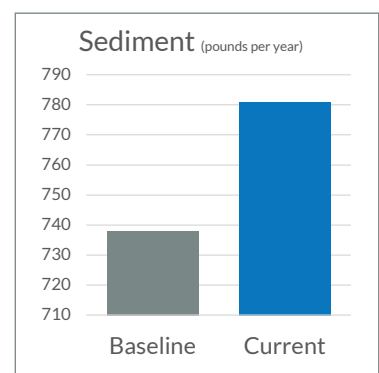
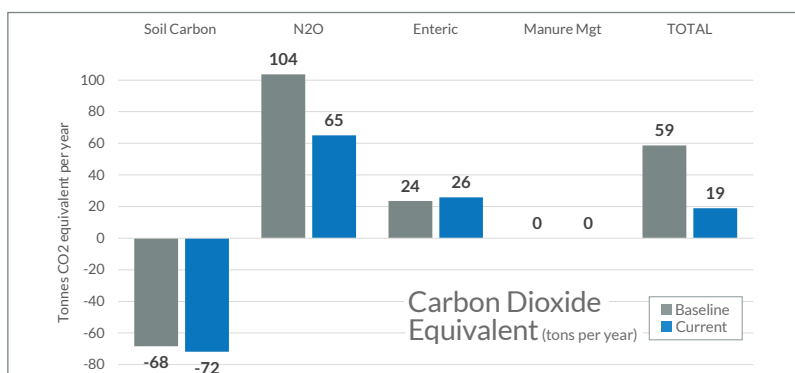
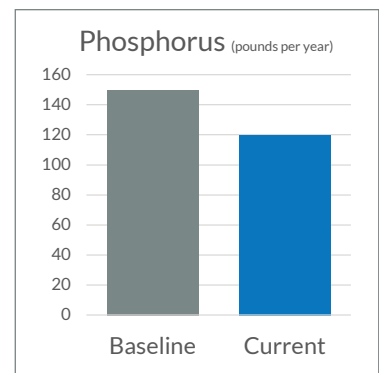
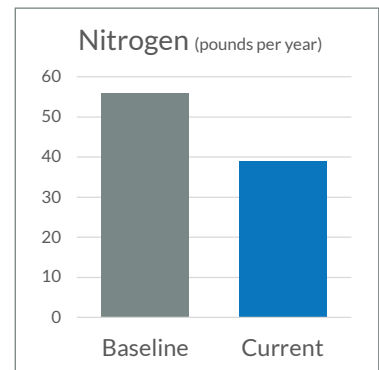
**WATER QUALITY:** A farm-scale modeling tool was used to estimate water quality benefits. Nitrogen and phosphorus pollution decreased by 30 percent and 20 percent, respectively. Estimated sediment loads, however, increased slightly, by 6 percent, potentially due to the increase in animals.



**SOIL HEALTH:** Soil health is determined by measuring several physical, biological, and chemical indicators, including the amount of organic matter in the soil and how well it can resist erosion (as measured by "aggregate stability"). Most of the soil parameters measured in both 2016 and 2018 were in the 'optimal' range, with the exception being much lower aggregate stability and organic matter values in two out of the four sampling fields in 2018. This decrease was not expected and we believe it was due to high rainfall and poor drainage in those fields.



**GREENHOUSE GAS (GHG) EMISSIONS:** A farm-scale tool was used to estimate changes in emissions. Overall, emissions from the farm decreased by roughly 68 percent, equivalent to the amount of carbon that would be stored annually by one-third of an acre of mature forest.



## FARMER'S VIEW

# Karla Funkhouser

Karla Funkhouser's farm has been in the family for at least four to five generations. She took over the cow-calf operation from her father. She says rotational grazing has improved her pastures and is simple enough she can do it on her own.

### Why did you choose to rotational graze?

Our extension agent was the first one who said something to me. It sounded good, it was something I could do, and I was always working toward this being a one-lady operation. It's such a wonderful idea, rotating the cattle, and I found out it's been around for years and years.

### What changes have you seen on your farm?

When my dad would have cattle on the whole pasture, no part got a rest, and the cattle were always walking over it. Now this rest period really helps the ground and the vegetation.

The quality of the grass is so much better, and the cattle love to get new grass. When I drive out to the field in the truck, they will come and wait. I can open up just a single strand of poly rope and they will walk right through to the next paddock. They are anxious to get in there.

### What do you think are the biggest barriers or challenges to grazing?

To make it work where my family farm is, the problem was getting a water source because the only source was right near the farmhouse. This is such a big improvement from what it was. Before, I was loading water into a 300-gallon tank and taking it out to different paddocks twice a day.

One thing, and I think it would scare most farmers, is if I had to come up with the money for the watering system. I could have managed the fence. But I think the program really helped.

### What would you tell other farmers interested in grazing?

I would tell other farmers what a great idea it is. You get your manure spread around so you don't have to spread fertilizer as often, and it does help control the weeds. If you set up temporary paddocks first, you get an idea of what will work for you.

My advice to somebody who wants to try it is to listen to people who have done it. I would highly recommend [CBF's Virginia watershed restoration scientist] Matt Kowalski. I found him easy to work with. I didn't mind being told what to do, and he knew how to set up the fencing. Even though I went to a class on fencing, they go too fast, and I needed to work with someone one-on-one.



**“The quality of the grass is so much better, and the cattle love to get new grass.”**

—Karla Funkhouser  
Funkhouser Farm

**LEARN MORE** about grazing in the Chesapeake Bay watershed and resources available for farmers through the Mountains-to-Bay Grazing Alliance by visiting [m2balliance.org](https://m2balliance.org).





## CHESAPEAKE BAY FOUNDATION

*Saving a National Treasure*

For more than half a century, the **Chesapeake Bay Foundation** has led a landmark effort to save the Chesapeake Bay—a national treasure on which the health and wellbeing of nearly 20 million people and 3,000 species of plants and animals depend. Grounded in science and focused on local waterways, we educate tens of thousands of people each year, advocate for better public policy, hold governments and polluters accountable, and perform essential hands-on restoration.

**CBF.ORG**

MOUNTAINS-TO-BAY



GRAZING ALLIANCE

The **Mountains-to-Bay Grazing Alliance** brings together private and public partners within the agricultural community to promote wider adoption of rotational grazing and related conservation practices that benefit water quality, improve soil health, and boost farm economies in the Chesapeake Bay watershed. It connects current and new grazing farmers through outreach, technical assistance, farmer-to-farmer mentoring, on-farm demonstrations, and other resources.

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