



FREDERICK COUNTY
MARYLAND

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
FOUNDATION

Saving a National Treasure

CASE STUDY

Open Book Farm

FARM: Open Book Farm, a 133-acre diversified farm that grows organic vegetables and raises 100 percent grass-fed beef, pastured poultry and swine.

OWNER: Andrew and Mary Kathryn Barnet

LOCATION: Frederick County, Maryland

BASELINE PRACTICES: Open Book Farm was originally a conventional dairy operation with confined animals and roughly 133 acres grown in soybeans, corn, and winter wheat.

ON-FARM CHANGES: The Barnets purchased the farm in 2015 and have progressively taken over its management from the previous owner. They converted about half of their land into rotationally grazed pasture and raise approximately 10 beef steers, 6,000 broiler chickens, 150 laying hens, 100 turkeys, and 20 swine each year.



Environmental benefits of switching to rotational grazing:



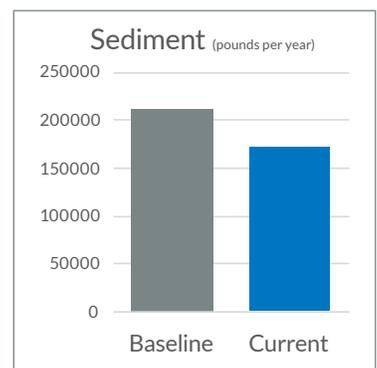
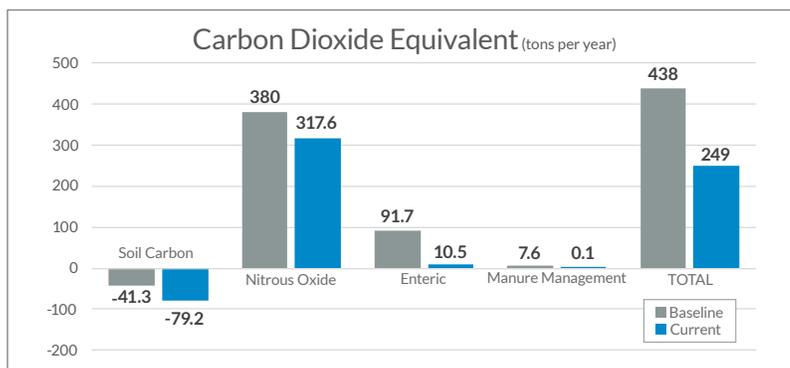
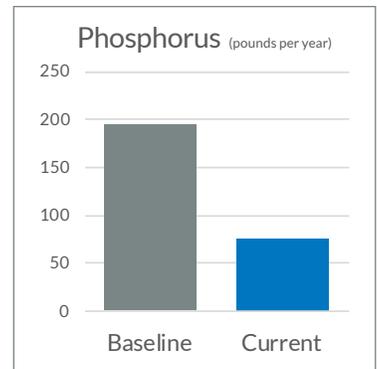
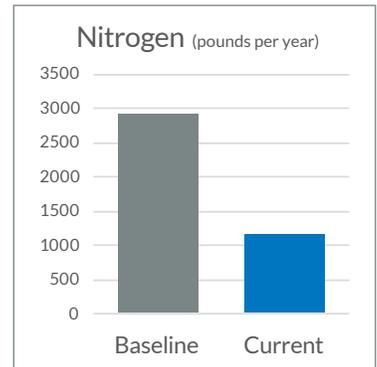
WATER QUALITY: A farm-scale modeling tool was used to estimate water quality benefits. Nitrogen, phosphorus, and sediment pollution decreased by 60 percent, 61 percent, and 19 percent, respectively.



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. These indicators result in a rating from zero to 100, where higher scores are better. Open Book Farm's soil health rating increased from 72 to 84 following the implementation of rotational grazing, including significant improvement in key indicators like organic matter and aggregate stability.



GREENHOUSE GAS (GHG) EMISSIONS: A farm-scale tool was used to estimate changes in GHG emissions. Overall, GHG from the farm decreased by roughly 43 percent, equivalent to the amount of carbon that would be stored annually by almost two acres of mature forest.



FARMER'S VIEW

Mary Kathryn Barnet

Andrew and Mary Kathryn Barnet met while working on an organic farm in Georgia. At their own farm, they've continued combining their love for physical work with a desire to grow food in an environmentally meaningful way.

How did you transition from row crops to grazing?

The first thing we did was seed the pastures and put in some cover crops where we wanted to plant vegetables. We did the riparian [streamside] buffer planting the second year. Then we put in fencing so we could bring cattle to the farm and we put in water lines so we could get water to the animals.

We've been really fortunate because Frederick County's NRCS agency is absolutely fantastic. In addition, CBF also helped us make the transition from row crops to rotationally grazed pasture.

What changes have you seen on your farm?

If we're sitting on our porch, we have this big riparian forest buffer planting, we have lots of pastures that have tall grass, lots of habitat, so we see and hear a lot of birdlife, which is really neat.

It's hard to compare a piece of ground in your mind to how it was four years ago, but what we can do is walk up to the border of the part of our farm that is still being row cropped. On one side you've got this lush pasture that is so diverse and so alive, and you literally hit a line and just see bare, dead ground.

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

Some of it is not realizing what's available, and part of it is not being in the community of people who are already doing these things. The Maryland Grazers Network was key in providing an experienced grazing farmer mentor to work with us. If you feel like you're inventing the wheel, you're probably not going to.

What would you tell other farmers interested in grazing?

If you're thinking about turning row crop ground into pasture, I think the programs that are out there will cover the vast majority [of the cost], but there can be timing issues and you may need to wait a year or more if government cost-share programs are out of funding. So it is important to do research on other funding options outside of government cost share.

You do have to plan ahead because of the funding cycles—you can't go in and expect to be approved the next day. For example, since we're taking over this farm progressively, we've already talked to NRCS and lined up what we want to do in the next two to three years.



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—Mary Kathryn Barnet
Open Book 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.



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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