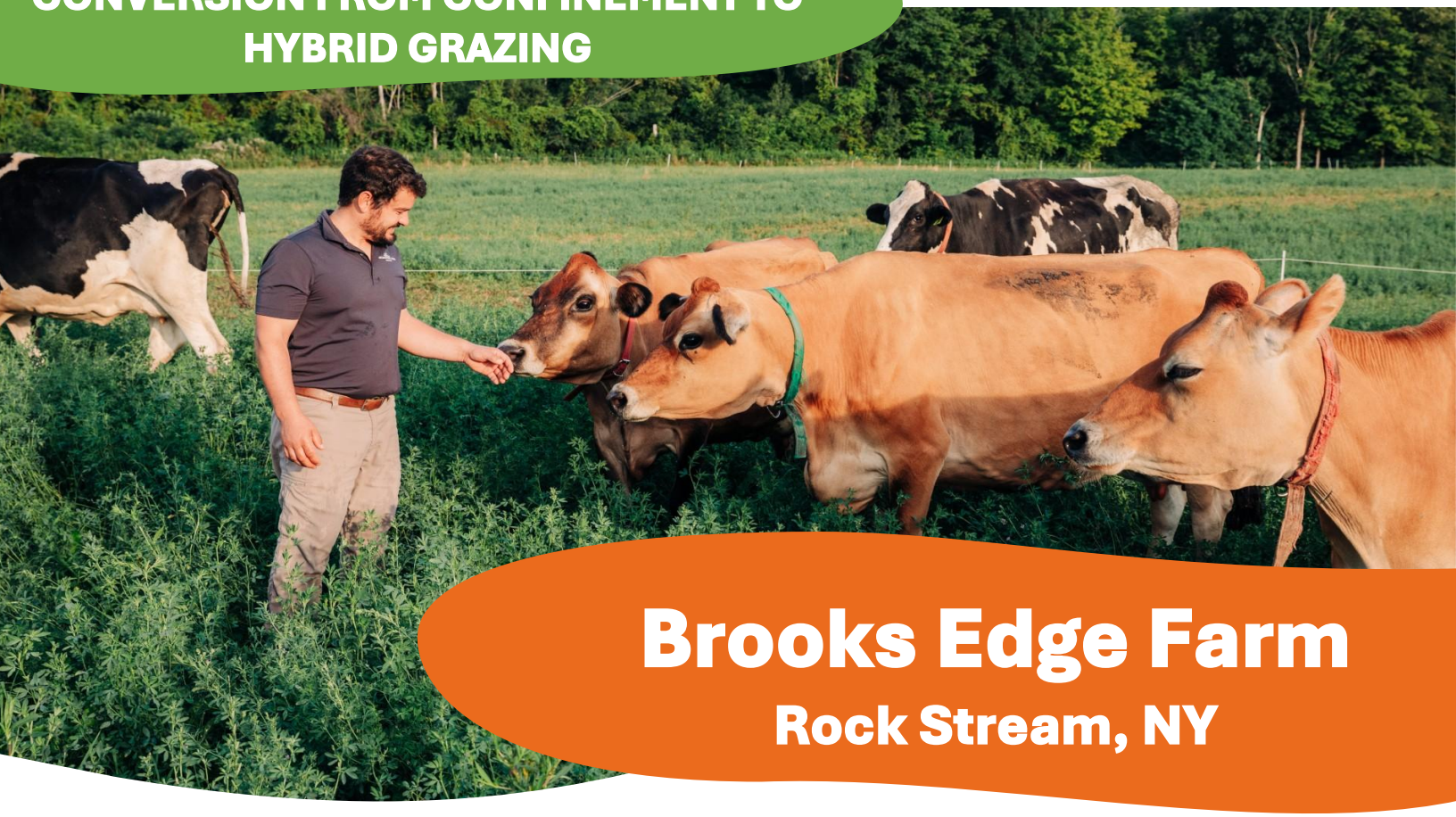
Wallace Center at Winrock International

NORTHEAST DAIRY BUSINESS INNOVATION CENTER

Conservation Performance, LLC

CONVERSION FROM CONFINEMENT TO HYBRID GRAZING



Brooks Edge Farm

Rock Stream, NY

Farm Summary:

Brooks Edge Farm is a great example of well-managed traditional dairy farm that was very common throughout the Northeast and the Great Lakes Basin. It is well-managed and productive, but not financially viable. This profile briefly explains how Lorin Hostetler and his family are planning to use grazing and appropriate infrastructure changes to improve financial performance and land stewardship.

Farm owners: Lorin and Alicia Hostetler, Mark and Mary Ellen Hostetler

72 to 150
Cows before & after conversion

23k to 18k
Lbs. milk per cow before & after conversion

560k to 1.1m
Lbs. milk shipped per worker before & after conversion

350
Acres

2.5
workers after transition

Farm History and Recent Performance:

The Hostetler family moved from Central PA to a farm on the west side of Seneca Lake in Central NY in 2004. They built a tie-stall barn for 72 cows, a milkhouse and two upright silos and started milking cows. They grow corn, hay, soybeans, triticale, and wheat on about 350 acres of land, producing almost all the herd's forage and grain, which is fed as a total mixed ration (TMR) with minerals in the barn. The farm is operated by three generations of the Hostetler family with no hired labor.

In 2010, the Hostetlers built an on-farm processing plant and store called Shtayburne Farm Creamery. They sell a variety of cheeses and ice creams. The creamery is considered a separate business enterprise, and its sales are not included in this analysis. About 15-20% of their farm's milk is processed on-farm and the remainder is sold as conventional milk through the Finger Lakes Milk Cooperative. Their herd averages a bit more than 23,000 lbs milk per cow per year. It is a very well-run farm, but it is very difficult to be profitable using confinement feeding with just 72 cows.

"The biggest impact from our plan will be milking more cows and needing less labor. Grazing will help us reduce disruption to the soil that row crop production brings. Being so close to Seneca Lake makes reducing nutrient and soil loss really important." – Lorin Hostetler

A comprehensive farm financial analysis (not including the creamery) for 2024 showed the farm earned net farm income (NFI) of $42,874 for the year, but that does not account for any labor cost, which was all unpaid family labor. NFI was $-39,626 when accounting for the cost of 1.5 FTE of labor. Unfortunately, this is not financially sustainable. In 2024, the farm produced a bit under 556,497 lbs milk per FTE worker, which is not a competitive labor efficiency in an industry that averages 1.5 million lbs milk produced per FTE worker for larger confinement dairies.

The Hostetlers currently have a plan to increase their herd size to 150 cows or more and graze the milking cows and youngstock. This document describes their plan and presents the projected financial results.

Anticipated Changes

Their herd had been mostly large-framed Holstein cows but are now being cross-bred with smaller cows to move toward a herd that is better adapted to a grazing system. Because cows expend energy to graze and their feeding cannot be as well managed as it is in the barn, average milk production per cow is assumed to decrease from 23,200 to an average of 18,300 lbs.

The Hostetlers started to experiment with grazing their milking cows in 2024 and 2025 and plan to graze much more intensively starting in 2026. Their plan includes supplementing grazed pasture forage with a TMR. During the grazing season the herd's nutrient intake will be 50% from grazed pasture (on a dry matter basis) and 50% from a fed TMR that has corn silage, corn meal, roasted soybean meal, and a mineral mix. In the shoulder seasons and winter some haylage will be included.

Feed rations have been balanced for 19,000 lbs milk per cow, but the financial projections are based on a herd average of 18,300 lbs of milk. Total feed costs, using market values for all feeds and including young stock, are estimated to average $11.12/cwt milk.

To accommodate a larger herd, the Hostetlers plan to build a composting bedded pack barn that can house up to 160 cows. The composted manure will help them build soil health and will reduce runoff to the nearby lake compared to their current liquid manure. The cost of constructing this barn will be cost-shared by state funding through the local conservation district, since compost barns are a manure management system.

For improved labor efficiency, the Hostetlers plan to retrofit a low-cost milking parlor into the current tie-stall barn. A swing parlor with 16 to 20 units will allow milking of 150 cows and cleaning up to be done in less than 2 hours. Retrofitting the parlor and upgrading the milk tank is estimated to cost less than $100,000, and Lorin has secured funding from the Northeast Dairy Business Innovation Center to cost-share these improvements.

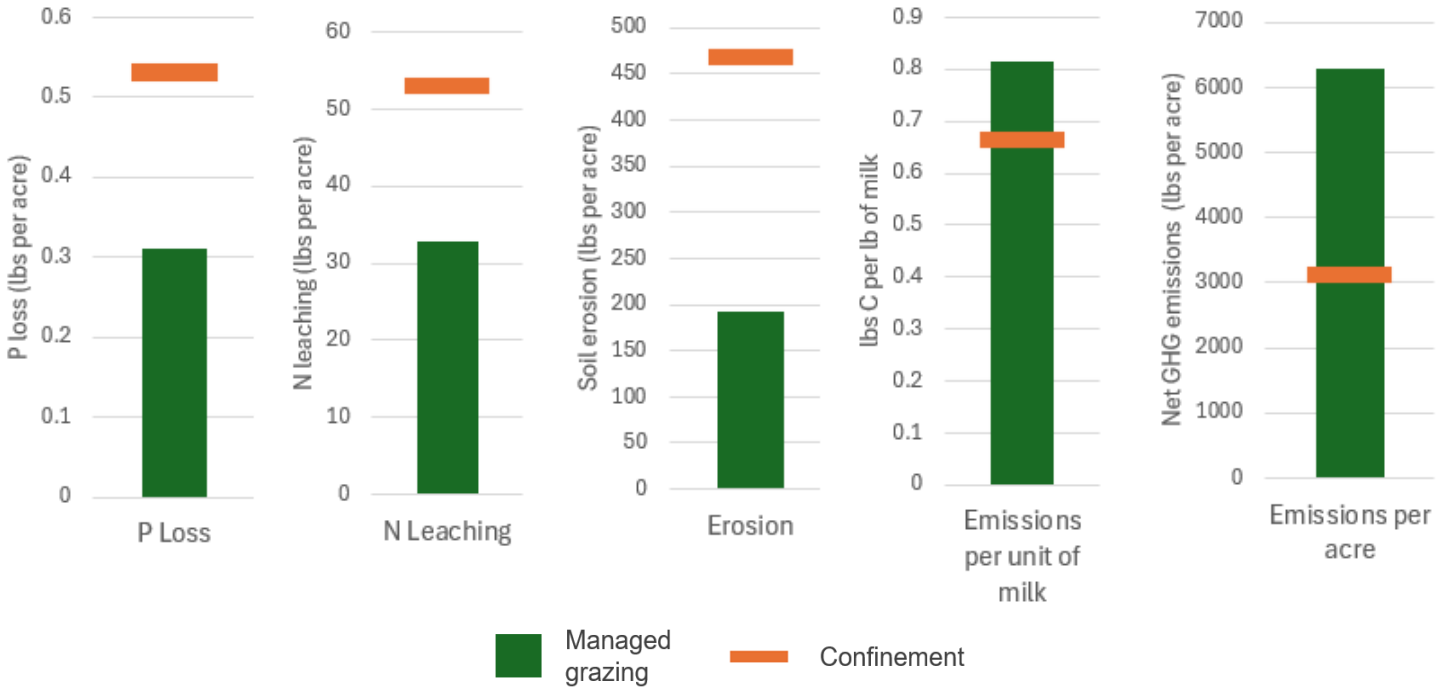
The total labor required to operate the farm will be no more than 2.5 FTE. Each FTE is equivalent to approximately 53 hours per week. Approximately 1.1 million lbs milk will be produced per FTE worker, which is close to a 100% increase in labor efficiency.

Future Financial Performance:

	Brooks Edge Farm (before transition)	Brooks Edge Farm (after transition)	30 NY Farms from Cornell DFBS (< 575 cows)
Milk per cow	23,200 lbs	18,300 lbs	25,321 lbs
Milk shipped per worker	560,000 lbs	1.10 million lbs	1.07 million lbs
Net farm income per cwt	$-2.37	$4.15	$2.83
Return on total farm assets	-3.12%	3.19%	2.9%

The financial projections indicate that the NFI (i.e. profit) after the changes are complete will be $113,956 per year. This assumes that all milk produced is sold for an average of $21/cwt, including milk that is processed on-farm. The resulting NFI would be the return for one FTE of labor and management (the expenses include paying 1.5 FTE of family labor at $20/hour) and the equity invested in the farm business. The NFI per cwt milk produced is estimated to be $4.15.

Environmental Outcomes:



The Hostetlers' plan will not only improve their farm's bottom line but will also provide several environmental benefits. Keeping more of their land in permanent and well-managed pasture, which is an increasingly thick sward of grasses and legumes, keeps more nutrients and soil in place relative to cropland. The water infiltration and holding capacity of the soils under well-managed pastures helps to prevent downstream flooding and withstand droughts.[1] The Hostetlers are very committed to being excellent land stewards and grazing will help them with this goal.

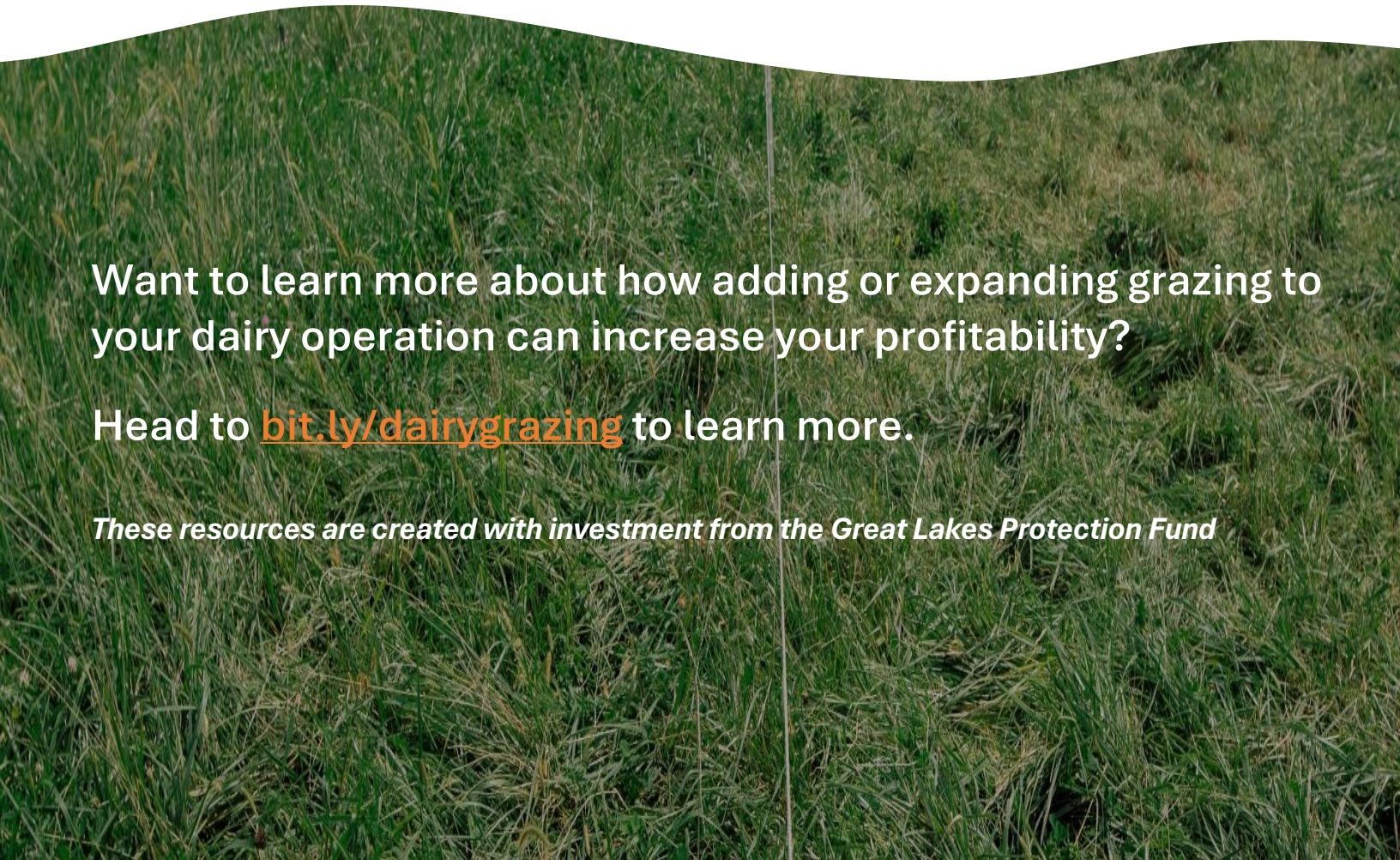
To estimate the amount of nutrient loss before and after the changes on their farm, we used the USDA Integrated

[1] Basche and DeLonge 2019. https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0215702

Farm System Model (IFSM) to simulate the biophysical processes and estimate losses of P, N, and soil from the Hostetler's land. P and soil losses from this farm are relatively low before any changes due to the use of no-till on all crop land. Even with more than twice the number of cows, IFSM estimates that annual P loss from their farm will decrease by 0.21 lbs P per acre per year (41%) after implementing their plan. Nitrogen (N) loss from nitrate leaching through the soil profile is estimated to average 32 lbs per acre per year after the transition is complete. Their current N leaching is estimated to be 53 lbs per acre per year, indicating that the grazing system could help reduce N leaching by 38%.

Finally, the changes at Brooks Edge farm are estimated to increase carbon emissions per unit of milk by about 24%, and also increase per acre emissions due to the increase in herd size needed to stay profitable. Importantly, this tradeoff is paired with 64% more milk from the same land base, 300% more profit, and significantly reduced nutrient and soil loss.

"The biggest challenge for me has been trying to shift from a focus on maximizing milk production per cow to a focus on overall profitability." -Lorin Hostetler



Want to learn more about how adding or expanding grazing to your dairy operation can increase your profitability?

Head to bit.ly/dairygrazing to learn more.

These resources are created with investment from the Great Lakes Protection Fund