

Beverly Bowen, Blackwell's Farm

*Raising cattle on a
family farm in the Piedmont*



INTRODUCTION TO THE FARM

Beverly Bowen is the proud co-owner and operator of Blackwell's Farm in Reidsville, North Carolina. The 60-acre farm is nestled in the Piedmont region of the state and features sandy clay loam soils, sloped grazing pastures, hilltop crop fields, forestland, pollinator habitat and a pond. Beverly raises a herd of eight brood cows and one bull, which produce eight calves for sale per year. Beverly also grows wheat, rye and specialty greens.

Beverly's parents purchased the farm in 1945 and grew tobacco and other crops until the mid-1980s. Beverly worked on the farm for the first 21 years of her life before embarking on a 30-year career in management at two companies. After graduating from high school, Beverly continued to work on the farm on weekends, summers and breaks to pay for her college education. During that time, the farm was leased out for cattle and hay production, and the topsoil on the farm eroded significantly.

Beverly returned to the farm in 2014 with the goal of revitalizing it and implementing agricultural conservation practices. She invested in erosion repairs, cattle fencing, cover crops and reduced tillage practices. Beverly used resources from the U.S. Department of Agriculture's Farm Service Agency, North Carolina A&T Cooperative Extension, North Carolina Cattleman's Association and Carolina Farm Stewardship Network to educate herself about livestock management practices that can help raise healthy cattle while protecting the farm's natural resources.

Farm objective

Beverly's objectives are to lead a healthy lifestyle on the farm, maintain healthy soils, give back to the community, and grow the farm to be financially self-sufficient.

“

It's about a simple lifestyle. It's about giving back to the community, and making a difference in the lives of other individuals. That is my whole focus.”

—Beverly Bowen, Blackwell's Farm

About the Farm

Farmer: Beverly Bowen

County: Rockingham

Crops and livestock: Beef cattle, wheat, rye and specialty greens

Farm size: 60 acres

Climate-resilient practices: Reduced tillage and cover crops

Financial outcomes:

- Reduced tillage increased farm income by \$437 per year.
- Cover crops increased net income on the farm by \$238 per year.

Climate challenges and resilient practices

Beverly is facing increasingly severe weather challenges associated with climate change. Blackwell's farm has been hit by two hurricanes and multiple storms in recent years.

Beverly started using climate-resilient practices, including reduced tillage and cover crops, in 2019 to help mitigate the effects of severe rainfall events. Converting to reduced tillage on her crop

fields and pastures has helped reduce erosion on the farm. The combination of reduced tillage and cover crops in the crop fields increased soil organic matter and water absorption capacity.

She adopted these practices knowing they would help the farm be more resilient to climate change, reduce environmental impacts and increase profitability.

ECONOMIC IMPACTS OF CLIMATE-RESILIENT PRACTICES

Table one below presents the financial benefits and costs associated with reduced tillage practices on 10 acres of pasture and five acres of row crops. Beverly reduced her tillage passes from 5-6 passes prior to 2019 to only 2-3 annual passes now. In doing so, she saved \$240 per year in fuel costs, \$235 per year in labor costs and \$189 per year in fertilizer. The erosion reduction benefits associated with reduced tillage saved her \$1,200 in annual erosion repair costs.

Reduced tillage also increased certain costs on the farm. Beverly purchased a \$47,000 tractor

and a \$6,000 no-till planter in 2019 to facilitate the reduced tillage practice. This presents an annualized cost of \$356 for the tractor and \$580 for the no-till planter, assuming 20- and 10-year lifespans, respectively. Beverly also increased her herbicide application to hold back weeds after reducing her tillage in the five acres of crop fields, costing her an additional \$99.

Overall, transitioning from conventional tillage to reduced tillage increased net income by \$437 per year across the farm.

Table one: Financial impacts of reduced tillage

Increase in net income				Decrease in net income			
Increase in revenue				Decrease in revenue			
Item	Per acre	Acres	Total	Item	Per acre	Acres	Total
None identified	\$0	0	\$0	None identified	\$0	0	\$0
Total increase in revenue	\$0	0	\$0	Total decrease in revenue	\$0	0	\$0
Decrease in cost				Increase in cost			
Item	Per acre	Acres	Total	Item	Per acre	Acres	Total
Fuel	\$16	15	\$240	Tractor depreciation	\$23.72	15	\$355.79
Labor	\$15.70	15	\$235.44	No-till planter depreciation	\$38.67	15	\$580
Fertilizer	\$18.88	10	\$188.75	Herbicide	\$19.80	5	\$99
Erosion repair	\$80	15	\$1,200	Learning activities	\$26.16	15	\$392.40
Total decrease in cost	\$131		\$1,864	Total increase in cost	\$108.35		\$1,427.19
Total increase in net income	\$131		\$1,864	Total decrease in net income	\$108.35		\$1,427.19
Increase in net income \$437							

¹ Labor wages were estimated using Bureau of Labor Statistics' "First-line supervisors of farming, fishing and forestry workers," accessed at: bls.gov/oes/current/oes_nat.htm#45-0000.

Table two below demonstrates the financial costs and benefits generated by growing daikon radish and cereal rye cover crops on a one-acre plot followed by specialty greens. Beverly planted cover crops to improve soil health, but soon realized that she could harvest and sell \$390 worth of daikon radish to a food box delivery service. This is a unique attribute of Beverly's case but could be replicable in some situations. Beverly also baled 900 pounds of the cereal rye for hay, generating \$162 in revenue. The cover crop allowed her to cut back on nitrogen fertilizer for the following cash crop, saving her \$28.

The cover crop added some costs to Beverly's operation. The cover crop seed cost her \$62 per acre. She had additional fuel costs of \$8.39 and labor costs of \$53. She fertilized the cover crop, which cost her \$69 per acre. Lastly, Beverly dedicated six hours per acre for learning about ways to improve her cover crop practices, which is associated with \$149 in labor costs.

Overall, growing cover crops on a one-acre plot before specialty greens increased Blackwell's Farm's net income by \$238 per year.

Table two: Financial impacts of cover crops

Increase in net income				Decrease in net income			
Increase in revenue				Decrease in revenue			
Item	Per acre	Acres	Total	Item	Per acre	Acres	Total
Daikon radish	\$390	1	\$390	None identified	\$0	0	\$0
Cereal rye hay	\$162.03	1	\$162.03				
Total increase in revenue	\$552.03	1	\$552.03	Total decrease in revenue	\$0	0	\$0
Decrease in cost				Increase in cost			
Item	Per acre	Acres	Total	Item	Per acre	Acres	Total
Fertilizer	\$28	1	\$28	Cover crop seed	\$62	1	\$62
				Fuel	\$8.39	1	\$8.39
				Labor	\$52.52	1	\$52.02
				Fertilizer	\$69.25	1	\$69.25
				Learning activities	\$149.20	1	\$149.20
Total decrease in cost	\$28	1	\$28	Total increase in cost	\$341.36	1	\$341.36
Total increase in net income	\$580.03		\$580.03	Total decrease in net income	\$341.36		\$341.36
Increase in net income \$238							

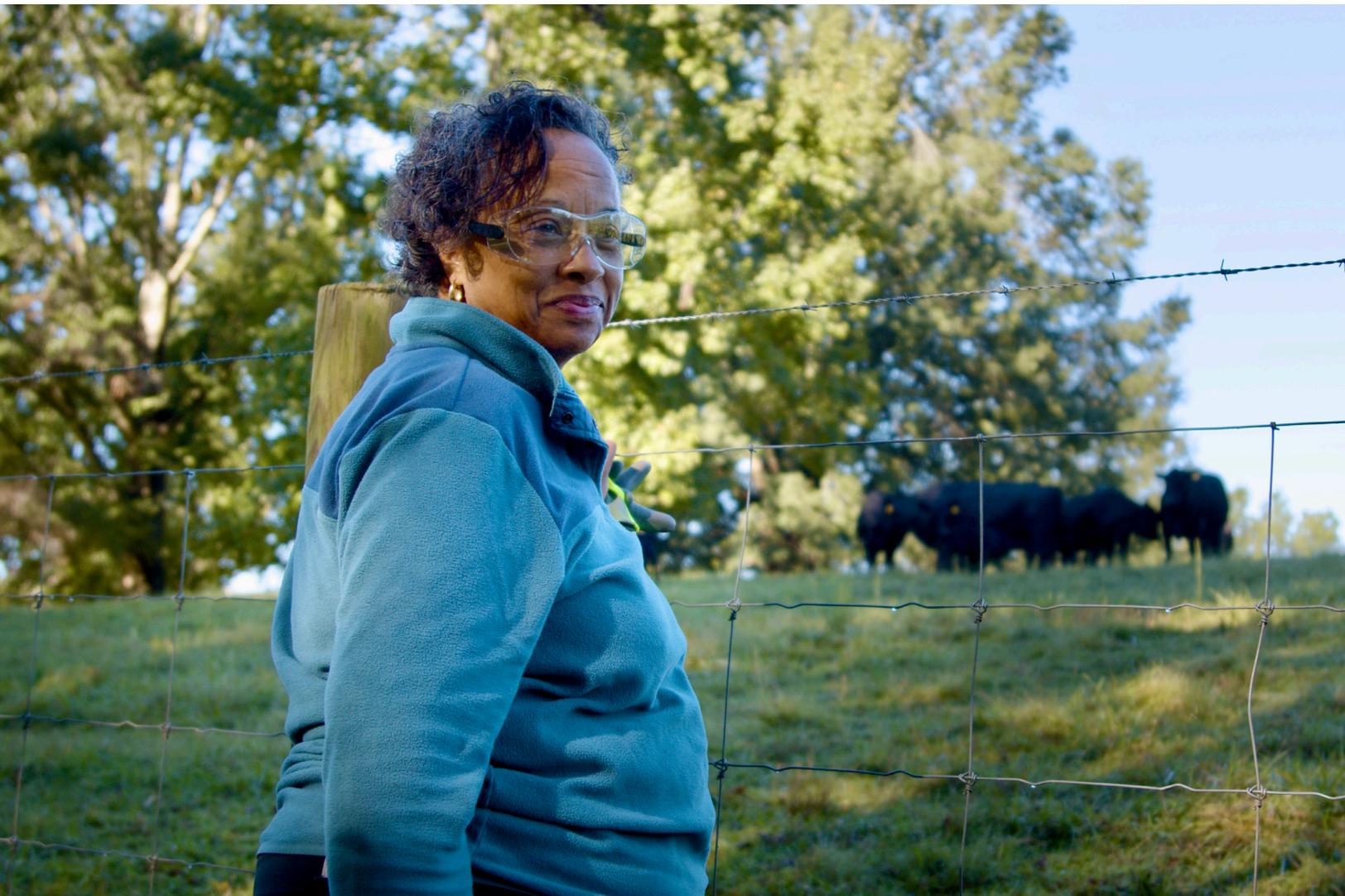
CONCLUSION

Beverly is increasing her farm's resilience to severe weather events and reducing erosion by increasing her soils' porosity and reducing soil disturbance with reduced tillage and cover crops. Beverly has been able to achieve these outcomes, while increasing the farm's profitability, through diligent training, education and expert support.

“

There have been several economic benefits. I can see where I've been able to cut back on the use of chemicals and fertilizer, and where I've built up the soil from the standpoint of the organic matter.”

— Beverly Bowen, Blackwell's Farm



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