



***Straight Arrow Bison Ranch
Nutritional Meat Raised on a
Family Farm***

***A North Central Initiative for Small Farm
Profitability Case Study***

***By Carol Doeden and Marilyn Schlake
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Straight Arrow Bison Ranch

<http://www.custercounty.com/straightarrow/>

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About the North Central Initiative for Small Farm Profitability

The North Central Initiative for Small Farm Profitability is a four-state, multi-institutional, farm-to-fork effort designed to improve the profitability and competitiveness of small and mid-size farms in Nebraska and the Midwest. This initiative brings together a unique and powerful blend of farmers, food and social scientists, marketers, extension educators, economists and others who are attempting to identify, adapt and apply practical, science-based, market-driven strategies that work.

Partners include the University of Nebraska's Center for Applied Rural Innovation (CARI) and Department of Food Science and Technology/Food Processing Center, Iowa State University, University of Missouri, University of Wisconsin, the Center for Rural Affairs in Nebraska, Practical Farmers of Iowa, and the Michael Fields Agricultural Institute in Wisconsin. The initiative is funded by a three-year grant from the U.S. Department of Agriculture.

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About the Case Studies

More than 40 case studies will be developed in the four-state region, including 26 in Nebraska. The case studies will focus on new generation cooperatives, networks for marketing high value crops and livestock, production and cooperative arrangements that increase the farmer's share of food system profits, community support of small and mid-size operations, successful capital transfer strategies that benefit both beginning and senior farmers, on-farm diversification, and successful use of the Internet by farmers and small rural businesses to market products.

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Introduction

For the Plains Indians, the bison meant everything – food, clothing, shelter, tools, means for barter and a sacred symbol of spiritual abundance. Once again, those large, clumsy-looking, vital animals are becoming an alternative food and material source for farmers interested in retaining the family farm and way of life.

In the case of Marty and Karen Bredthauer of Broken Bow, Nebraska, their herd of bison isn't just used to save the family farm; it is able to recreate the family's farm life that was nearly lost during the 1980s farm crisis.

Raising bison and marketing various bison products has been a success for the Bredthauers, in spite of the unfamiliarity of bison products and a fluctuating market. Overall, the couple has found that raising bison has kept their farm viable and allowed them to raise their children, as they prefer, out in the countryside.

The Ranch: Current Function and History

The Bredthauers own Straight Arrow Bison Ranch, just south of Broken Bow on the edge of the Nebraska Sandhills. After their marriage, the couple farmed with his father until they purchased their own farm north of Broken Bow in 1980; by 1985, due to the farm crisis and a financial overload, they had to sign the land back to the original owner. Marty took an off-the-farm job in 1985, working with an irrigation company. He spent 15 months in Algeria, drilling 3,500-foot deep

irrigation wells. From 1990 to the present, Marty has been employed by Becton-Dickenson, a pharmaceutical supply manufacturing company, as a tool and die maker.

It was a 1994 vacation at Nebraska's Ft. Robinson that piqued the Bredthauers' interest in raising the large animals. Since the children are home-schooled, the whole family researched bison, even read the *Bison Breeders handbook*. Marty was going to drop the idea, but Karen and the boys pushed for it. Finally they

Bison Beginnings

Marty and Karen had an open house that first year to share the buffalo information and samples, and close to 300 people attended. "We thought we had hit a gold mine," Marty recalled. They served samples of bison cuts, showed a video, gave tours of the animals in the field, showed skulls and hides and sold more than \$1,000 of meat. Afterwards, they purchased a freezer, mounted it on a trailer, and sold their meats in Broken Bow several times.



The Bredthauer's sit down for an informal dinner of buffalo burgers.

looked at four head of bison in Callaway. It took three months to make the decision to purchase the animals and start what is now a 60-bison herd.

The Bredthauers' run their herd on 320 acres of pasture that they purchased shortly after losing their ranch in the 1980s. They do not raise hay or other crops for feeding livestock.

Subsequently the trailer was taken to other area cities, with sales up to \$2,000 per day. The Bredthauers have come to see their market niche of raising a quality product, not readily available, and direct marketed to the consumer.

To make full use of their pasture, the Bredthauers initially took in buffalo for a daily fee on the Broken Bow land. Gradually, Marty

bought more heifers, and began building up his herd.

“It is fun taking care of the buffalo,” Marty said. “In the winter-time, their metabolism goes down to half of what it is regularly, which means they live on less feed. We do supplement their winter time ration with prairie hay big round bales. It can be below zero outside, and the buffalo are just lying or standing on top



of the hill.” The buffalo put on a lot of weight in the fall, which also helps them to weather storms. Heat doesn’t bother them either.

Buffalo calves weigh half as much as beef calves, but those baby bison hit the ground running. “We don’t help the buffalo cows deliver their calves,” Marty said. “We have had only one still-born calf.”

“I enjoy checking during calving,” Karen said. “It is fun to see the new babies. I keep a notebook of each birth so we can tag the

animals correctly later.” Bison do not receive hormones nor do they get vaccinated. Rarely, a bison will become ill and die. The lack of additives is part of what makes bison meat such a healthy choice, Karen pointed out.

The males all get along until they reach breeding age of three-plus years, then the pecking order of biggest and strongest get first chance to mate. Mating takes

place largely between August and September, and the cows calve between April and June.

Buffalo Stories

“Buffalo are truly wild animals. They appear to be quite docile but occasionally do strange things. I have seen some awesome things when they try to get out,” Marty said. “We only had one bison actually escape from our pasture. He was a 4- or 5-year-old herd bull who was beat out by the other bulls. He got four miles away, and after trying for two days to catch him, we

decided that was enough, and ‘harvested’ him.” The bull was so huge that it was difficult getting the body to the processing plant.

That first October, Karen was in the basement when she heard a roaring and violent banging. She ran outside to see their bull finish lifting a 12-foot gate and then drop it. After he was done, he turned back into the pen with the other three bison. Apparently this male had no other bull to battle, and took out his fighting urge on the gate.

The huge animals give several warnings before charging, Marty said. No one approaches the animals on foot. They are herded with motorized vehicles and usually approached in the pen from the safety of the catwalk built outside the pen.

Marketing Bison Products

Selling the animals:

“We sold heifer calves for two years, until the market dropped,” Marty said. Because they keep track of the bloodlines, none of the bison are inbred. At first they used someone else’s dominant bull, but now they have fresh bulls of their own.

Marty and Karen also purchase bull calves for the meat market. They are harvested at 2-2 ½ years. For 2001, they bought 15 calves and planned to sell 20 bulls. “It takes time to enlarge the herd,” Marty said. “Sometimes it is cheaper to buy an animal rather than raise it.”



Meat:

The buffalo are taken to a USDA inspected plant in Hastings for processing, more than 100 miles away. The meat is packaged in heavy vacuum-sealed plastic.

The Bredthauers' are not organically certified but do tout their meats as having no added vaccinations, antibiotics, steroids, or growth stimulants. Research has shown Bison to be a natural meat source that requires very little intervention from the producers.

The usual bison customer is someone who buys bison for health and nutritional reasons, or prefers the wild game. During a customer survey conducted a couple of years ago, the Bredthauers' found most of their customers were over 50 years of age and were buying Bison meats for health benefits. Today, younger females, aware of the low fat benefits, have also begun to purchase the meats.

Nutrient Composition

(per 100 grams of cooked lean meat)
 Bison: 2.42 g. Fat; 143 calories; 82 mg Cholesterol.
 Beef: 9.28 g. Fat; 211 calories; 86 mg. Cholesterol.
 Pork: 9.66 g. Fat; 212 calories; 86 mg. Cholesterol.
 Chicken (skinless): 7.41 g. Fat; 190 calories; 89 mg. Cholesterol
 Source: USDA Handbook

**Straight Arrow Bison Ranch
Buffalo Products**

Grilling Steaks

Tenderloin Filets	2/pkg. 6 oz. steaks	\$18.00/pkg.
New York Strip	2/pkg. 8 oz. steaks	\$20.00/pkg.
Ribeye Steaks	2/pkg. 8 oz. steaks	\$15.00/pkg.
Top Sirloin	1 20-24 oz. steak	\$12.50/pkg.
Cube Steak	4/pkg. 5-6 oz. steak	\$10.25/pkg.

Roasts

Available in fresh and pre-cooked packages
 Weights vary from 2 to 5 lbs. \$ 6.50/lb.

Steaks for Stir-Fry, Marinating, or Slow Cooking

Round Steak, Sirloin Tip or Flank Steak	1/pkg. Av. 1.8 lbs.	\$ 6.75/lb.
Stew Meat	1 lb. pkg.	\$ 4.50/pkg.

Pre-Cooked, Ready to Heat or Eat

Buffalo Hot Dogs	4/pkg.	\$ 5.50/pkg.
Summer Sausage	1 lb. pkg	\$ 5.50/pkg.
Buffalo Jerky	2 oz pkg	\$ 3.50/pkg.

Extra-Lean Ground Bison

Bulk	1 lb. pkg.	\$ 3.95/lb.
Quarter Pound Patties	4/pkg.	\$ 4.25/pkg

Pre-Selected Bundles

Steak Lovers (.25# Ribeye Steak, 1# New York Strip, .75# Tenderloin Fillet, 1# Top Sirloin Steak)		\$62.00/box
Variety Pack (2 1/2# Roast, 1# New York Strip Steak, 1# Patties, 1# Bulk Burger)		\$44.00/box
Party Pack	6# Patties	\$28.50/box
Economy Pack	6# Bulk Burger	\$26.50/box
Picnic Special (3# Summer Sausage, 2# Cooked Roast, 2 2 oz. Pkg. Jerkey)		\$44.00/Box
Backyard Bar-B-Q	3# Patties, 3# Hot Dogs	\$34.00/box
Cook's Special (2# Stew Meat, 2 1/2# Roast, 1 1/2 Round Steak)		\$40.50/box

Shipping available within USA (lower 48): \$25.00 for 1 box, \$30.00 for 2 boxes to same address. Shipped in styrofoam container with dry ice. All boxes include cooking instructions, recipes and a free bar of homemade buffalo tallow soap.

into their buffalo-burger for \$3 a pound, Karen acknowledged, but she and Marty don't want to offer that kind of product. They like to advertise that their buffalo meat is lean, and have it be true.

The Bredthauers continuously conduct price comparisons to help them decide on their meat prices. They will occasionally discount meat prices to help move the slower selling items. The Bredthauers have considered lowering their prices, but the break-even analysis indicates that they should instead raise their prices. They are hoping to increase their sales volume to cover more of the overhead costs such as processing and distribution costs and thus bring down their break-even point.

Soap:

Karen decided to turn the bison tallow into soap after the couple chose not to include the extra fat in their processed bison burger. She renders the fat, melting it to pure tallow, in an all-day process that yields several batches. To each batch, Karen adds water, lye and fragrances, and either molds the soap into a large rectangle that will later be sliced into bars, or she fills little bison-shaped molds with the creamy soap. After two or three days the soaps have hardened enough to smooth, shave and set to dry out for several weeks before wrapping in plastic to sell.

When Karen finally packs the finished soaps, they are often placed into little wooden gift crates, manufactured by Wood Options, a company staffed by handicapped individuals.



Buffalo shaped soap, sells for \$4.50 per box.

Karen's soap customers tend to be tourists, looking for something unusual as a gift, or repeat bison customers who like the environmental aspects of the bison soap.

Hides:

The buffalo hides are carefully removed and washed at the processing plant and then shipped to Florida to be commercially tanned. They sell for \$850-1000 per hide. Hide customers typically have more disposable income and value the buffalo hide as a hunter would value the pelt of an exotic animal. Customers will often buy the hide as a gift.

Skulls:

Marty and Karen hired a taxidermist in Broken Bow to prepare a few of the bison skulls for sale. "A local guy does our skulls," Marty said. These traditional hallmarks of the Old West are sold out of the traveling trailer and also on the website, for approximately \$130-150 each.

The Bredthauers anticipate that their Buffalo skull customers will be individuals who care about the Old West and its symbols, and those who want to have such an item as part of a collection, or even a lifestyle.

Marketing – Distribution Methods

On-Line:

The Internet accounts for half of all the sales made by the Bredthauers. "We ship bison all over, even overseas," Marty said. At www.custercounty.com/straightarrow/ Marty and Karen present information about their products in a clear and attractive way. The Products section is the main attraction, with prices and items clearly stated, along with ordering instructions.

Retail from the trailer:

The Bredthauers haul a 12x6-foot trailer packed with two freezers and a portable generator for selling their bison products. One of the come-ons is a small orange plastic dish filled with beef jerky samples for potential and existing customers. The Trailer is a clean white, with a large banner reading: "Buffalo Trading Post."



Selling Buffalo Meat at the local Farmer's Market.

Challenges to Success

Prices

Initially, the meat and breeding stock sales took off running, and the Bredthauers were enthusiastic that their idea for making money was a success. Since that moment in 1995, the meat animals have remained steady but they have seen heifer calf prices go from \$2,400 apiece down to \$400 each.

Marketing, Bison benefits

Although working with the bison is rewarding as well as interesting, with a growing niche market all across the U.S., marketing the bison and their products is the most challenging part of the Bredthauers' business.

"We would like to get our product into grocery stores and restaurants," Marty said. One of the challenges is there is very good beef out there and it is cheaper than bison. "People don't want to pay double for buffalo burgers or steaks."

If the family can't take in the needed dollars from their products, then it doesn't pay to continue raising the bison.

Growth

"The Nebraska EDGE class helped us evaluate and approach markets," Karen said. "They helped us with the organization and research, too." She acknowledged she hasn't aggressively marketed her soap, but will do so "If I have time," she laughed. She has received requests for her bison soaps from a museum in Colorado and from the Archway in Kearney. She also pointed out there might be a supply ceiling with the bison tallow, depending on how many animals they harvest.

Vision for the Future

Short term goals:

1. *Establish a regular customer base of at least 300 repeat customers.* The Bredthauers already have a database of more than 800 names of people who have purchased from them. The key now is to get many of those people to become repeat customers.
2. *Attract new customers to add 50 names to the customer base this year (and the same or greater in future years).*
3. *Develop broader appeal for the Bison, therefore greater acceptance.* The couple are working on a new pamphlet which clearly

touts the healthful aspects of bison, and offer samples of their product whenever they take the freezer on the road.

4. *Find stores in Grand Island, Kearney, North Platte and McCook to carry bison meat on a regular basis.* The U-Save store in Broken Bow already sells bison meat, but the Nash-Finch chain just recently purchased it. It remains to be seen if the new owners will continue and expand the bison market. The Bredthauers are aware that people want to buy their particular bison products, so they hope the chain continues to offer the Straight Arrow brand.

5. *Sponsor tours to educate people about the advantages of bison to the environment and to a healthy diet.* This goal was cut short when the federal government informed the Bredthauers that they would need a special license and special insurance to operate such a tour. At this writing the Bredthauers are no longer giving tours of the bison range

6. *Provide Demonstrations of bison's health benefits* – Karen has started making bread for the Farmer's Market in Broken Bow. She uses organic wheat (purchased from a local producer) in her bread, and explains to customers how that ties in with the bison that they sell. The summer of 2001 they served buffalo hot dogs, buffalo runzas and a buffalo roast. "People had an opportunity to eat buffalo meat and look at the nutritional benefits, and my bread is part of that," Karen said.

The Nebraska EDGE Program offers a small business training course for agricultural entrepreneurs called "*Tilling the Soil of Opportunity: The NxLevel™ Guide for Agricultural Entrepreneurs.*" The course helps producers evaluate their alternative or innovative business ideas before investing in livestock, land or equipment. For more information on the training course, visit www.nxlevel.org or contact Marilyn Schlake, mschlake@unl.edu.



7. *Increase profitability and efficiency of their business through better record keeping.*

Long-Term Goals

1. *Establish on-farm kitchen/retail store to accommodate visitors and prepare ready-to-eat products by 2004.*

2. *Establish herd of 30 to 40 bison cows with calves and bulls over the next 4-5 years.* This goal has been met. The Bredthauers presently have about 30 females plus yearling and two-year-olds which is the maximum number the pasture will carry.

Conclusion

The Bredthauers have a successful small sideline business in their herd of 60 bison. They are making at least a modest profit while enjoying all the benefits of country life. "One thing that keeps us going is that our product is nutritionally excellent," Karen said. "We want to provide it for the people living in central Nebraska."

Marty adds, "We just try to be good stewards of the land, no matter what we produce."

As the herd of brown bison grazes its way slowly along the hilltop, Karen sums it up. "I never get tired of watching them," she said.



Appendix

On-Line Bison Resources

- ◆ Alberta Agriculture, Food and Rural Development. Resources on Bison Production. <http://www.agric.gov.ab.ca/navigation/livestock/bison/index.html>; and <http://www.agric.gov.ab.ca/agdex/400/freedex.html#special>
- ◆ Appropriate Technology Transfer for Rural Areas (ATTRA): Bison Production. Excellent resource for information on Bison Production, Markets and Regulations. <http://www.attra.org/attra-pub/bison.html>
- ◆ Missouri Alternatives Center. Bison Research and resources. Access through "Animal" and "Exotic Animals." <http://agebb.missouri.edu/mac/library/>
- ◆ Montana State University, Center for Bison and Wildlife Health. Provides information on all aspects of the biology and management of the American bison. <http://www.montana.edu/~wwwcbs/>
- ◆ National Bison Association, non-profit association which promotes the preservation, production and marketing of bison. <http://www.bisoncentral.com>
- ◆ North Dakota State University: Commercial Bison Production: Economic Analysis and Budget Projections. Written by Steve Metzger and V.L. Anderson. <http://www.ag.ndsu.nodak.edu/carringt/98beef/comm.htm>
- ◆ Pennsylvania State University, Cooperative Extension, Agricultural Alternatives: Bison. Provides a comprehensive overview of the Bison Industry. Written by George L. Greaser, Melissa Morrow Jayson K. Harper. <http://agalternatives.aers.psu.edu/livestock/bison/>
- ◆ Saskatchewan Agriculture, Food and Rural Development. Bison Production - Economic and Production Information for Saskatchewan Producers. Technical information provided on raising commercial Bison. http://www.agr.gov.sk.ca/docs/livestock/bison/production_information/fmb398.asp

Appendix

3-year Cash Flow Projections

Straight Arrow Bison Ranch

3 year Cash Flow Projections

	2001	2002	2003
Beginning Cash Balance	\$ 1,000	(\$ 321)	\$ 895
Cash in from Operations			
Cow-Calf Operation	\$ 5,400	\$ 9,000	\$10,800
Absentee Ownership	\$15,900	\$15,900	\$15,900
Retail Meat Sales	\$44,000	\$44,000	\$44,000
Other Sales: Hides, Soap, Skulls	\$ 3,400	\$ 7,650	\$ 7,650
Tours and Meals	\$ 3,930	\$ 8,575	\$12,862
Total Cash Receipts	\$72,630	\$85,125	\$91,212
Cash Disbursements			
Direct Production Costs			
Cow-Calf Operation	\$ 2,820	\$ 2,820	\$ 2,820
Absentee Ownership	\$ 2,670	\$ 2,670	\$ 2,670
Retail Meat Sales	\$26,280	\$22,680	\$21,018
Other Sales: Hides, Soap, Skulls	\$ 3,210	\$ 3,100	\$ 3,100
Tours and Meals	\$ 2,825	\$ 5,350	\$ 7,425
Total Direct Production Costs	\$37,805	\$36,620	\$37,033
Total Selling/Administration Cost	\$12,511	\$14,133	\$15,469
Total Overhead Expenses	\$10,780	\$11,656	\$12,374
Total Cash Disbursements	\$61,096	\$62,409	\$64,876
Net Operating Cash	\$11,534	\$22,716	\$26,336
Cash From Investment or Loan Activities			
Other Cash In			
Interest Income			
Loan Proceeds	\$21,000		
Total Other Cash In	\$21,000	\$0	\$0
Other Cash Out			
Interest Expense ¹		\$ 1,000	\$ 1,000
Capital Purchases (Growth & Fixed Assets) ²	\$11,855	\$ 6,000	\$ 7,500
Loan Principal Payments	\$22,000	\$14,500	\$15,000
Other			
Total Other Cash Out	\$33,855	\$21,500	\$23,500
Net Other Cash	(\$12,855)	(\$21,500)	(\$23,500)
Net Yearly Cash	_____	\$ 1,216	\$ 2,836
Ending Cash Balance	(\$ 321)	\$ 895	\$ 3,731

¹ Interest on Ag Loan, ² Purchase Breeding Bull

Appendix

3-year Projected Income Statement

Straight Arrow Bison Ranch Projected Income Statement

	12/31/01	%Total Sales	12/31/02	% Total Sales	12/31/03	% Total Sales
Sales						
Cow-Calf Operation	\$ 5,400	7.4%	\$ 9,000	10.6%	\$10,800	11.8%
Absentee Ownership	\$15,900	21.9%	\$15,900	18.7%	\$15,900	17.4%
Retail Meat Sales	\$44,000	60.6%	\$44,000	51.7%	\$44,000	48.2%
Other Sales:						
Hides, Soap, Skulls	\$ 3,400	4.7%	\$ 7,650	9.0%	\$ 7,650	8.4%
Tours and Meals	\$ 3,930	5.4%	\$ 8,575	10.1%	\$12,862	14.1%
Total Sales	\$72,630	100.0%	\$85,125	100.0%	\$91,212	100.0%
Cost of Sales						
Cow-Calf Operation	\$ 2,820	3.9%	\$ 2,820	3.3%	\$ 2,820	3.1%
Absentee Ownership	\$ 2,670	3.7%	\$ 2,670	3.1%	\$ 2,670	2.9%
Retail Meat Sales	\$25,400	35.0%	\$22,680	26.6%	\$21,018	23.0%
Other Sales:						
Hides, Soap, Skulls	\$ 2,910	4.0%	\$ 3,100	3.6%	\$ 3,100	3.4%
Tours and Meals	\$ 2,825	3.9%	\$ 5,350	6.3%	\$ 7,425	8.1%
Total Cost of Sales	\$36,625	50.4%	\$36,620	43.0%	\$37,033	40.6%
Gross Profit	\$36,005	49.6%	\$48,505	57.0%	\$54,179	59.4%
Operating Expenses						
Sales Expenses	\$12,511	17.2%	\$14,133	16.6%	\$15,469	17.0%
Overhead Expenses	\$10,780	14.8%	\$11,656	13.7%	\$12,374	13.6%
Depreciation Expense	\$ 5,200	7.2%	\$ 5,200	6.1%	\$ 5,200	5.7%
Total Operating Expenses	\$28,491	39.2%	\$30,989	36.4%	\$33,043	36.2%
Net Operating Profit	\$ 7,514	10.3%	\$17,516	20.6%	\$21,136	23.2%
Non-Operating Income/Expense						
Interest Expense			\$ 1,000	1.2%	\$ 1,000	1.1%
Net Income Before Taxes	\$ 7,514	10.3%	\$16,516	19.4%	\$ 20,136	22.1%
Anticipated Taxes (Self Empl tax + 15%)						
	\$ 1,641	2.3%	\$ 5,080	6.0%	\$ 5,694	6.2%
Projected Net Income	\$ 5,873	8.1%	\$11,436	13.4%	\$14,442	15.8%