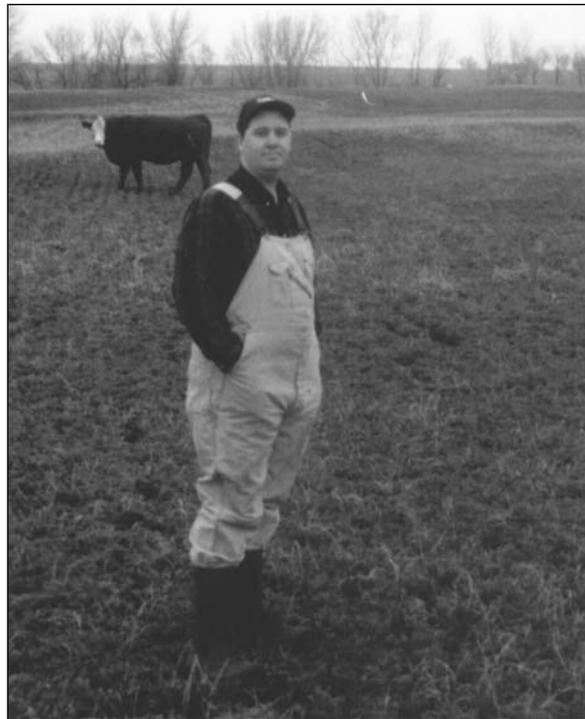


## Jim Townsend, Julia & Richard Townsend Dickinson County



Rarely in modern agriculture does one see a new farm operation begin from the ground up - a modest home, a multiple use shop/machine shed, a water well, fencing, corrals, access lanes and so on. But this is just what one sees on approaching the Townsend farm southwest of Chapman in Dickinson County, Kansas.

Jim grew up on a farm in south central Pennsylvania with his parents, Richard and Julia Townsend. Upon high school graduation in the early '90s, Jim moved to Kansas to attend Kansas State University, majoring in animal science. Jim fell in love with the central Kansas area, as did his parents after several visits, and together they began to consider

## Conversion of Cropland to Grass

### Cooperator

Jim, Julia & Richard  
Townsend  
1685 1600th Ave.  
Chapman, Ks. 67431

### Watershed:

Deer Creek into  
Smoky Hill River

### Water Quality Concerns:

Run-off and soil erosion from cropland carrying nutrients and chemicals

### Demonstration

\* Convert all but 13 acres of 200 acres of cropland to permanent grass to be managed under a Management Intensive Grazing System.

relocating their farming operation. Upon Jim's graduation, they decided to make this change. In March 1995, they purchased a 313 acre contiguous tract of grass and crop land.

During the summer of 1995 the Townsends built a house and machine shed and moved onto the land around Labor Day. The home site covers about 2 acres. The rest of the farm consists of 218 acres of cropland, 60 acres of native and brome pasture, 12 acres of grass waterways, an 8 acre prairie hay meadow, and a 10 acre wooded wetland area. The cropland had been mostly planted to continuous wheat.

The Townsends were primarily

*The Townsends' place is a new farmstead, having moved to Kansas after selling a farm in Pennsylvania. They brought with them their commitment to conservation and good farming practices, and have converted much of the former cropland to grass. In 2000, Jim married and lives nearby.*



interested in a livestock operation based on cattle, but also with the possibility of hog and poultry production for direct and niche marketing. Initially they purchased some stocker cattle to run on their pastures, and they started the process of converting part of the cropland to forage production.

The Townsends brought with them from Pennsylvania a strong concern about soil conservation and water quality. Part of their cropland is highly erodible and has been terraced. But all of the cropland showed signs of erosion, and much of the farm drained into the 10 acre wooded wetland area.

In terms of water quality, the Townsends were well aware of the pollution threats to surface and ground water from long term fertilizer and chemical use. Thus they integrated these concerns into the planning process for redesigning their new farming operation.

The Townsends used the Clean Water Farms Project to support their move to converting cropland to forage production and the development of a management intensive grazing (MIG) system. They began seeding some of the cropland to a cool season fescue/alfalfa forage mix and installing underground water lines to strategic areas.

As their match to the grant, the Townsends began building perimeter fence. They also built inside fences in semi-permanent lines for internal grazing cell boundaries. (They use polywire to fence smaller grazing paddocks within the larger grazing cells.) And as part of building the larger grazing cells, the Townsends fenced off the wetland area in a way that lets them control cattle access to the overall 10 acre wooded - wetland area.

Eventually the Townsends plan to seed all but about 13 acres to permanent forages. They want to keep the 13 acre annual cropland available for either summer or winter annual forages to supplement their overall grazing enterprise as needed. To begin with they seeded about 65 acres on the south side of the farm, where the farmstead is located, to an endophyte free fescue at a rate of 20# per acre with 2# per acre of alfalfa.

The initial seeding failed to establish due to unusually dry weather conditions during the spring and summer of 1996, and much of it had to be reseeded. The second seeding established much better. At that point Jim and Richard installed the underground waterlines and built the high tensile grazing cell fences. And they also built some corral and receiving area fence for working cattle.

The remaining cropland has stayed in grain production, utilizing a no-till milo, soybean, wheat rotation. The grain production and farm program payments have helped the operation's cash flow, while the crop residues and winter wheat have provided supplemental winter grazing.

One of the difficulties in converting cropland to forage production and

grazing is the loss of income from that land during the year when the forages are initially getting established. If the forages fail to establish and have to be reseeded, as initially happened with the Townsends, the loss of production and income from the land can extend into a second year. Just as their newly planted forages were beginning to establish, the price of stocker cattle increased substantially, raising the capital requirements and risk for stocker purchases and marketing.

Jim solved this dilemma by leasing cows. He manages, feeds and cares for the leased cows for half of the calf crop. Given the difficulty he had establishing his cool season forages and the ongoing drier than normal weather conditions, Jim has grazed his new forage stands relatively lightly as rainfall and growing conditions permit. After some early spring grazing, Jim has taken one heavy cutting of hay, and he then comes back in the fall for additional grazing. In the fall Jim grazes the cool season cells after taking cattle off of the native pasture. He also gives the cows some access to the cool season forages as they are also grazing milo stubble, improving the cows level of nutrition.

The water quality benefits with this project are fairly obvious. The cropland converted to fescue/alfalfa forages requires no herbicides and will require little or no fertilizer. Lying above and adjacent to the wetland, these fields no longer pose as much of a pollution threat from fertilizer and chemical runoff. Cropland converted to perennial forages will not only prevent the loss of topsoil or maintain soil loss tolerance levels, but the forages will actually improve and build soil.

The Townsend's grazing system keeps the cattle moving to fresh forages with access to several watering points. The cattle are never concentrated in one area for any extended period of time. The manure is widely dispersed away from surface water areas, posing a reduced, if any, pollution threat.

The Townsends agreed to have KBS set up water quality monitoring equipment on their farm. The presence of the natural wetland allowed KBS to monitor the wetland's role in altering on-farm water quality. Although the length of time for the research was short, the data collected indicates that the wetland does act to stabilize and in some cases enhance water quality. (See Appendix.)

The Townsends have bucked the trend of farmers leaving the land and the demise of farmsteads to the bulldozer by making a new beginning. Projects of this magnitude always take more time, work and money than initially planned, but they continue to make steady progress.



*Above, Jim Townsend stands beside a water sampling unit in the farm's natural wetland area. Instead of viewing environmental issues as a threat to farm viability, the Townsends have embraced stewardship concerns and are adopting ways to protect the resources while improving their farm's management and productivity.*

### **Townsend Farm Characteristics**

**Farm Size:** 313 acres including 153 acres cropland, 60 acres brome and native pasture, and 64 acres cropland converted to fescue/alfalfa.

**Crops:** No-till wheat, soybeans, and milo. Long-term goal is to convert more cropland to permanent forages under a MIG system.

**Livestock:** Leased cow/calf operation.

**Labor & Management:** Family.

**Livestock Management:** Graze fescue/alfalfa early spring and fall, Hay in early summer. Conventional summer native pasture. Winter on crop residue.

**Weed Management:** Not a problem in grazing system. Chemicals and crop rotation in no-till crops.

**Insect Management:** Crop rotation . Graze to control alfalfa weevil.

**Soil Fertility:** Interseed alfalfa in grass for nitrogen production. Grazing management to disperse manure widely. Conventional fertilizer in crop production.

**Water Quality Management:** Seed cropland to forages. Control cattle access to wetland area. Use no-till for soil conservation. Avoid concentrating cattle in sensitive areas.

**Profit Strategy:** Convert more cropland to forages and implement a Management Intensive grazing system; expand cow herd and include stocker grazing as part of operation.