High-Tech Tools for Ancient Values: Year-Round Farming at Taos Pueblo

The fourth in a series on Watershed Discipleship toddwynward@gmail.com

Think the local food movement is a fad for elite yuppies and homesteading hipsters? Think again. Meet the Red Willow Growers Cooperative: Taos Pueblo food producers who use cutting-edge technologies to promote place-based values that have sustained their culture for a thousand years.

The Red Willow Farmer's Market is a high-desert haven, providing abundant food year-round at 7,100' above sea level. Located next to two substantial greenhouses and an educational building at Taos Pueblo, the market is open Wednesdays year-round and offers grass-fed beef, seasonal produce, eggs, fresh breads and pastries, fruits in season, jams, jellies, and soaps. From their rangeland nearby, the Taos Pueblo War Chief's Office provides local buffalo, which is USDA certified, 100% grass-fed, and sustainably produced. During summer the farmer's market is both indoor and outdoor, with a dozen vendor tables and an outdoor grill; in the off-season the market moves inside and is more limited.

The farmer's market operation is impressive enough by itself. But even more remarkable are the sustainable greenhouses on site that keep fresh produce growing even in deep winter.

Angelo McHorse, Red Willow's new Farm Manager, knows the systems well. He needs to: his livelihood—and the well-being of hundreds of other members of his bioregion—depend on it. Last week he took me to the heart of Red Willow's heated greenhouse system. Passing by stacks of locally-harvested piñón logs, he swung open the thick round metal door of the GARN heater to reveal a chamber that would soon hold a blazing fire. Describing the GARN in 2011, Tara Somerville of the Taos News called the high-tech heater "the foundation of a complex but sustainable system that is allowing agriculture to thrive even as temperatures plunge." Observing Angelo manage Red Willow's operations almost three years later, that statement seems truer than ever.

Angelo summarized how the GARN system works: Over 3000 gallons of a water mixture swirl around in a steel chamber surrounding the firebox. This heated water then shoots into above- and below-ground pipes to warm the pair of greenhouses, as well as two other buildings on site. All the particulates from the piñón fire are burned off when the smoke travels into the second core of the system—a ceramic tube that increases the temperature to over three thousand degrees. After taking a few minutes to warm up, the system becomes smoke-free.

Red Willow uses high tech tools to achieve traditional goals, in order to achieve both food sovereignty and regional food security. The GARN biomass heater is only one of several innovative systems that have made the project a regional model in adaptive climate change sustainable farming. As we walked, Angelo showed me several other

sustainable systems: one of the most remarkable was a series of strategically placed fans near blue barrels that siphon the hot air from the top of the greenhouse into an underground piping system in order to warm the earth around the plants and prevent freezing. Another energy-preserving technology used at Red Willow is cellulose insulation, made from locally sourced 100 percent recycled newspaper, used in the walls of the market's walk-in cooler. In addition, solar panels provide the energy for the greenhouses' drip and irrigation systems, and recently acquired batteries are going a long way to take the entire system off the grid, as well as provide emergency back up.

The potential unleashed by the year-round greenhouses has put Taos Pueblo on the map as a model for other pueblos and communities looking to revitalize bioregional desert agriculture. Visitors have come from Tuba City, Hopi, Dine, Navajo Country, and White Apache Mountain to see the emerging project.

The powerful mixture of traditional values and cutting-edge techniques used at Red Willow are influencing younger generations at Taos Pueblo through the Red Willow Education Center's after-school and summer youth programs started by Education Director Shawn Duran. In 2002, as a twelve year-old, Angelo McHorse took part in Red Willow's first Sustainability Institute in 2002. Now, as Farm Manager and college graduate, he's deeply grateful for all that has come before him, and also feels that he can take the Red Willow project to a new level.

"It feels like I'm completing a circle," he says quietly. "So much has been done before me, it feels like I'm building on a legacy." In past years, the goal of producing enough fresh produce year-round for significant market sale has proved elusive; McHorse and his colleagues are working hard to ensure that this upcoming winter will be the most profitable and abundant yet.

My visit to Taos Pueblo left me inspired. This little farmer's market is about so much more than local healthy food production: it's also about robust local economics, place-based environmentalism, and education. It's a vision that is the foundation for three interconnected initiatives: First, the Red Willow Farmer's Market provides year-round fresh local food free of chemicals and additives; second, the Red Willow Grower's Coop specializes in resilient bioregional food production powered by renewable resources; and third, the Red Willow Educational Center focuses upon sustainable agriculture educational and vocational opportunities for Pueblo youth, farmers and entrepreneurs.

Our nation's communities sorely need this kind of spark: a compelling vision inspiring interconnected initiatives to launch massive social change. We need new local visions that improve how we eat, how we shop, how we farm, how we work, how we relate to the earth and each other. In short, we need an invitation to reinhabitation. We need to learn how to become watershed discipleship communities.