



PARDUCCI WINE CELLARS

Stewardship Profiles in California Agriculture
Environmental Leadership with Energy, Water Efficiency and Habitat Restoration

Adolph Parducci, a Californian of Tuscan descent, established Parducci Wine Cellars with his wife Isabella in 1932. The Parducci family sold the winery in 1976 to the Teachers Management and Investment group, but continued to be active in the business until 1994. In 1996, investor Carl Thoma purchased Parducci Wine Cellars and, eight years later, sold it to the current owners, Tom and Tim Thornhill of Mendocino Wine Co. The Ukiah-based vineyard covers about 250 acres and produce around 200,000 cases of wine a year.

PROBLEM

When the Thornhills arrived at Parducci Wine Cellars, a wastewater pond on the property was polluted with the byproducts of winemaking. The polluted pond didn't provide a healthy habitat for species to flourish. "It was purple. It stunk. Nothing lived in it," Tim recalled.

Additionally, the winery was also using far more energy and water than the Thornhills believed necessary.

SOLUTION IMPLEMENTATION AND MANAGEMENT

Upon acquiring the business, Tim and Tom began undertaking a series of sustainability efforts.

To address the polluted pond, Tim sought recommendations from consultants, who advised him to spend some \$1.2 million to take out four or five acres of grapes to develop a pond and install four ten-horsepower agitators.

ACHIEVEMENTS

- Certified as the first carbon neutral winery in the United States in 2008
- Reduced energy usage by 200,000 kilowatt-hours
- 30% decrease in vineyard water usage annually
- Increased crop yield and fruit quality



**"Measure everything!"
-Tim Thornhill**

Instead, he spent \$350,000 on a system of waterfalls and wetlands, which function as follows: a five-horsepower motor lifts water from the bottom of the pond to a high point on the property. After going through two settling tanks, the water travels down the hill through four trickle towers made from old barrel racks and constructed wetlands, which are 270 feet by 50 feet on average. "I'm mimicking here what goes on in the Rocky Mountains. It's the most oxygenated water in the country. Every time the water moves from one level to the next via gravity, oxygen is injected into the water," explained Thornhill. Frogs, turtles, fish, insects and birds now flock to the cleaned-up pond. The Audubon Society has even documented the appearance of a rare green heron at Parducci Wine Cellars, says Thornhill. The business has received a National Wildlife Federation habitat certification for the pond.

In order to decrease water usage, the Thornhills have implemented dual-drip irrigation system on a third of their acreage. The system directs water to the vines that need it most. The brothers consistently measure moisture levels in the soil and only water when it is essential.

In 2008, Parducci Wine Cellars became the first carbon neutral winery in the United States. Fifteen percent of the energy powering its facilities comes from solar panels and 85 percent comes from wind power. Tim Thornhill, a partner in Parducci Wine Cellars and its chief operating officer, said the payback period on the switch to greener energy sources was roughly seven years.

CHALLENGES/OBSTACLES OVERCOME

Thornhill emphasizes that Mendocino Wine Co. wants to leave the land better than how they found it. So far, he says, wine shoppers as a whole aren't willing to pay a premium for that kind of stewardship. An early project of the Mendocino Wine Co. at Parducci Wine Cellars was to attain organic and biodynamic certifications. Ultimately however, the Thornhills decided to let the biodynamic certification lapse, although it continues to adhere to biodynamic farming practices. Thornhill doesn't consider the biodynamic certification worth the requisite cost of a few thousand annually or paperwork. "I don't use organic or biodynamic or being green as a marketing tool," he said. "I think it's number seven or eight on the list of how [a customer] chooses to buy wine."

Tim Thornhill believes that lack of creativity is the most formidable barrier to sustainability. "People thinking you can't do it [has been a challenge] to some degree," said Thornhill. "I've never let that stop me."

STEWARDSHIP PRACTICES



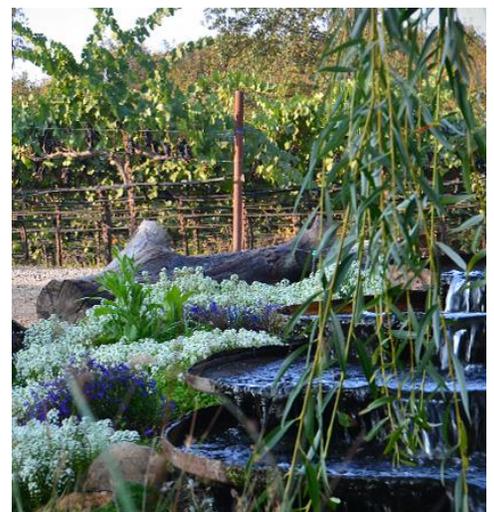
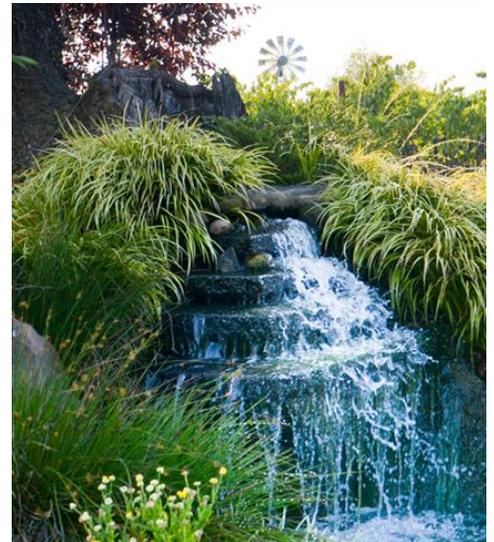
Energy



Water Efficiency



Habitat Restoration



Money has sometimes been a driving factor, such as when Parducci Wine Cellars evaluated greener energy sources. “To have converted the entire property to solar would have been pretty cost prohibitive,” said Thornhill. “We were content with having a certain amount of it be solar.”

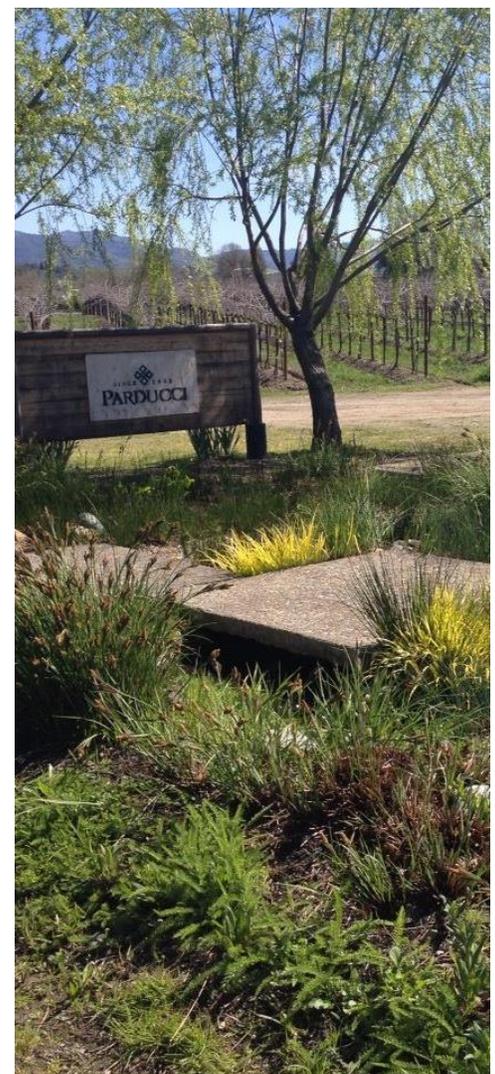
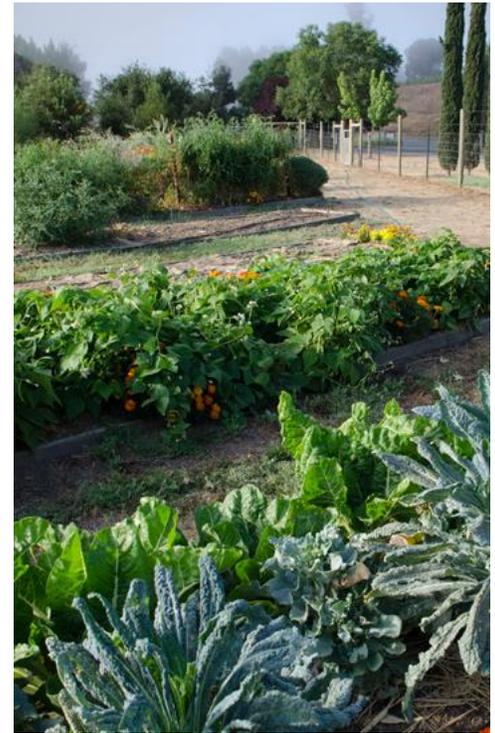
MEASURING SUCCESS

Tim Thornhill is dedicated to measuring inputs and outputs at the winery. For example, he has placed forty tensiometers in the soil to measure moisture. Similarly, the winery initially relied on one water meter, but Tim has added more than twenty others throughout the property. Moreover, Parducci Wine Cellars offers paid incentives to employees who come up with novel water saving ideas. The business has been recognized for its environmental achievements with the Governor’s Environmental and Economic Leadership Award in 2007 and 2009.

Between 2007 to 2009, the Thornhills reduced the winery’s energy usage by nearly 200,000 kilowatt-hours. “During the same three-year period, we basically doubled our production,” said Thornhill. To save energy, which constitutes one of the operation’s biggest expenses, the winery encourages employees to turn off lights and machines that are not in use, and keep doors closed to maintain temperatures.

Thornhill estimates that Parducci Wine Cellars processes five million gallons of waste-water annually through its waterfalls, wetlands and pond, a system that contains fifteen acre feet of water on average. The amount of water heading to the pond dipped 20 percent in a single year because of the water savings measures the winery has undertaken, said Tim Thornhill in an interview with Organic Connections magazine. On one 30-acre parcel at the vineyard where the winery has concentrated upgrades, the Thornhills were able to reduce their water usage by ten acre-feet over the course of seven years. Across its 250 acres, Thornhill estimated Parducci Wine Cellars has decreased its vineyard water consumption by roughly 30 million gallons, or 30 percent per year, since Mendocino Wine Co. acquired Parducci Wine Cellars. “We have also increased the quality of our fruit by doing this,” said Tim Thornhill.

Tim Thornhill strives to make Parducci Wine Cellars self-sufficient. In pursuit of that goal, he hired Jess Arnsteen to turn a 15-acre unproductive plot of land into a thriving garden with approximately a thousand varieties of vegetables, herbs, fruit and other crops.



Additionally, there are twelve acres of pasture and wild forage land where eighty sheep and six pigs graze. Parducci Wine Cellars also has 200 chickens. The winery's 70 employees are able to take home the produce grown at the garden twice a week and a dozen eggs weekly. In addition to the produce, the garden contributes to the health of the vineyards. "You'll find various insects that are going to be eating other insects that would be eating the grapes. Rather than us trying to go out and go on some mission to go kill those bugs, better let the nature balance itself," said Arnsteen.

For more information about the stewardship practices discussed in this profile, please contact the vineyard directly. You can reach Betsy Wildberger by phone at (707) 463-5365 or by email to betsyw@mendocinowineco.com



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