

## A Friend of the People

***Bamboo has become such a popular material for a plethora of products that its very existence is being threatened.***

By Jim Morrison  
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WHEN JACKIE HEINRICHER STARTED her quest to produce bamboo in mass quantities, she was merely interested in increasing the inventory for her nursery, Boo-Shoot Gardens. She had no idea it might bolster a fledgling industry, fight global warming, and change the world.

While many of us think of bamboo as being a dangerously invasive plant, Heinricher learned it is difficult to culture. Seed is not an option. The more than 1,400 varieties flower only one time every 15 to 120 years. And once they flower, they die.

So she tried cloning bamboo through tissue culture. After eight years of failures, she and her laboratory partner, Randy Burr, finally began to crack the code. "It was a moment of tearful emotion, a kind of redemption, really," Heinricher says.

And it came just in time. Demand for bamboo is exploding, but the supply is endangered. A United Nations report warns that as many as half the world's woody bamboos may be ticketed for extinction because of deforestation.

While a few others have had limited success in propagating bamboo, Boo-Shoot, located north of Seattle, is now a prolific producer of the plant. It offers 28 species of bamboo, from the smallest ground-cover types to the most towering timbers, and has another 40 species in the research-and-development phase.

In 2004, the first year it successfully tissue-cultured bamboo, Boo-Shoot shipped 2,000 plants. This year, Heinricher says, the company will ship about one million plants.

The West has only recently discovered bamboo, which has been a staple in the rest of the world for centuries. It's used in thousands of ways -- for everything from housing (an estimated one



billion people live in bamboo homes) to food to paper. In China, the plant is known as “friend of the people.” And not only is it versatile, it’s green, environmentally speaking (it is a grass, after all). In nature, bamboo filters heavy metals from groundwater and removes four times more carbon dioxide from the air than an equivalent-size stand of trees. And it returns more oxygen to the air, according to a Dutch scientist’s research.

Now Western entrepreneurs are partnering with Chinese bamboo producers to create a variety of products. Bamboo fiber is being championed as a good material for clothes because it’s light and breathable. Bamboo flooring, as strong as steel if the plant’s been harvested correctly, is available everywhere, from IKEA to Lowe’s. Sector 9, a San Diego company, makes a bamboo skateboard. Another California company, Calfee Design, makes a bamboo bike, which it hopes will eventually be a cheap transportation option in third-world countries. How useful is bamboo? Thomas Edison used a bamboo filament in his first lightbulb more than 130 years ago.

Additionally, a Japanese cement manufacturer has put money into one of Vietnam’s bamboo forests as a carbon-credit investment because bamboo grows faster -- in a year, timber bamboos can gain as much as 60 feet -- and can be sustainably harvested about every five years instead of every few decades, as is the case for hardwoods.

David Knight established Teragren, a firm headquartered on Bainbridge Island, Washington, in



1994 to offer bamboo flooring in the United States. In the early years, he says, he and his wife, Ann, who is the company’s executive vice president, didn’t take any money out. But that’s since changed. Sales in 2006 were up by 38 percent from 2005’s. And 2007 sales were \$17.2 million, up by 46 percent from 2006’s. “Even with the uncertainty in the economy, we will still grow at least 30 percent [this] year,” Knight says.

Rich Delano, owner of Bamboo Textile in Brea, California, started trying to sell bamboo fiber in the United States four years ago. When he had trouble finding takers, he made some bamboo T-shirts for his wife and friends. They loved them. Soon, he was shipping T-shirts for private-label customers. His business has tripled in the past year, and he’s partnering with an increasing number of apparel makers. Last year, he purchased his own factory in China to ensure a steady supply of yarn and fiber. He points out that big chains like Target and Bed Bath & Beyond sell bamboo sheets and pillows, emphasizing the superior feel of bamboo. Delano thinks bamboo is the next cotton. “It’s only going to get bigger and bigger,” he says.

Knight says he partners with a small factory group in China to ensure his timber is harvested sustainably. And Delano offers a certification showing that no toxic materials are used in the making of his products.

BUT WITH ALL THIS DEMAND, reports of overharvesting have surfaced in China, in India, and elsewhere, Heinricher says.

She gets e-mails almost daily from companies and government agencies in countries such as China, Taiwan, Mexico, Korea, and India that are looking for her help -- and her plants. "Of the several limousines that have pulled into my office parking lot, many have contained corporate owners from Asia racing to fix what is, at some point, going to become a serious bottleneck in production [of bamboo]," she says. "There's actually a bit of a crisis with the plant."

She says Asian businessmen find it odd to come speak to an American woman about growing bamboo, which has been a part of their culture for thousands of years.

That's testimony to the accomplishment of Heinricher and Burr, who figured out how to tissue culture and mass produce the Boston fern in 1973 and was a partner in B&B Laboratories (which was purchased by Boo-Shoot in early 2007). "The failures in the lab were exceptionally discouraging," Heinricher says. "We would get plants going to the point where they would show some promise for multiplication, and then simply go backward to the point of total mortality."

Finally, they found a way to grow *Fargesia rufa*, a Chinese clumping bamboo favored by pandas. "I remember thinking that as gutsy and expensive as all the research and effort was, maybe we could do this thing," she says. "Then caution set in. This was a small victory in the midst of a much larger goal."

Caution was wise. Tissue culturing takes time. A cutting from an existing plant is sterilized in bleach and then put into an agar of salts, plant sugars, hormones, vitamins, and other ingredients to encourage new growth. Getting the right formula can take years.

Heinricher and Burr also discovered that a tissue culture that worked for one species often didn't work for others. Over the next three years, they slowly built up the stock, learning along the way. Now a number of plants Boo-Shoot ships aren't sent to nurseries for horticultural use but to countries like Korea, India, and Mexico for use in agriculture, reforestation, and carbon mitigation.

Heinricher sees potential for farming bamboo in the United States. Three known species are native to North America, but she notes that the plant "is truly not well understood here." By that, she means it has a reputation as being the Darth Vader of the plant world: People assume it attempts to conquer every corner of the universe. She asserts that it won't.

To highlight the environmental advantages of bamboo, Heinricher has launched a Plant a Boo, Save the Planet campaign. And the limos keep pulling up in her office parking lot, seeking help in restocking bamboo forests half a world away.

"It's been an amazing journey for my company," she says. "Just to watch the interest out there and what people are doing globally and how important bamboo is as a plant has been fascinating to me."

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