

# ENTREPRENEURS

## PART-TIME RECYCLER PROVIDES BENEFITS TO CONSUMERS

*2ND CHANCE WOODS  
BERRYTON, KANSAS*

A third generation woodworker with a reputation for quality craftsmanship, Mark Duncan has an inborn passion for wood. As a landfill groundwater monitoring specialist for the Kansas Department of Health and Environment (KDHE), Duncan observed the large quantities of wood going to waste. Trees such as oak, walnut, hackberry, elm, maple, and cedar were routinely dumped at landfills and burned. Duncan jumped into action after reading an article in “Popular Woodworking” magazine about a municipal recycling program that converted city trees to high-quality lumber (see p. 13). In 1999 he started a business to give landfilled trees in Topeka, Kansas, a “2nd chance.”

### Grant Jumpstarted Business

2nd Chance Woods received a financial jumpstart with \$20,000 from a solid waste competitive grant program administered by KDHE. The grant helped Duncan purchase a Timber King portable sawmill and a 16-foot double-axle trailer. Adding a planer, table saw, and chop saw, Duncan launched his business and produced 20,000 board feet of lumber in the first year.

### Landfill Provides Raw Material

To date Duncan has focused his lumber recovery efforts at one city-run Topeka landfill that is “dedicated” to trees and brush. Logs are dropped off at the landfill by the Topeka Parks and Recreation Department, as well as by private tree service firms. Duncan visits the landfill on Saturdays and loads his trailer, rated at 7,500 pounds, with discarded municipal logs. He uses a winch with a “rolling hitch” set-up to roll the logs onto the trailer. After securing the logs on the trailer he drives 15 miles to his rural home in Berryton, where he saws the logs into lumber. Duncan currently air dries his lumber but plans to build a solar kiln in the near future. Dried lumber is planed and edged.

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Logs from storm-damaged trees are given a “2nd Chance” thanks to a State grant.

### **Products and Markets**

Lumber is usually advertised for sale to the public by word of mouth. Duncan has numerous repeat customers, which speaks well for the high quality and reasonable price of his product. Duncan also makes and sells indoor and outdoor furniture and construction lumber, and does custom woodworking projects. One of his trademark products is the EarthClamp, a hand screw clamp of exclusive design made entirely out of recycled materials.

### **Part-Time Is Just Fine**

2nd Chance Woods is a one person part-time business, which suits Duncan just fine. Volunteers are welcome to help with sawing and are reimbursed for their time with lumber at the rate of 8 board feet per hour.

Duncan sees a bright future for 2nd Chance Woods. An abundant supply of free trees can be recovered from landfills, the market is good for his value-added wood products, and the public is eager to purchase his lumber at prices lower than in a typical lumber yard. He proudly acknowledges, “I’m recycling and providing a benefit to consumers at the same time.”

**In Memoriam:**

Mark Duncan

February 6, 1965 - July 7, 2004

## SELLING HANDCRAFTED PRODUCTS FROM SALVAGED LOGS

*URBAN FOREST WOODWORKS*  
*LOGAN, UTAH*

According to George Hessenthaler, in 1847 there was only one tree, a juniper, where Salt Lake City is now located. For over 150 years, however, the city has embarked on a vigorous shade tree planting program. He estimates there are now over 200 species and 5 million trees in Salt Lake City, and about 75 percent are hardwoods including walnut, ash, locust, sycamore, maple, catalpa, Russian olive, chestnut, and various fruit trees. After watching many of these trees be cut—due to old age, storm damage, or urban expansion—and dumped in the county landfill, Hessenthaler decided to take action. In 1988 he founded Urban Forest Woodworks to salvage urban trees and convert them into hardwood products.

### Product Line

Urban Forest Woodworks employs 3 to 12 employees, depending on the size of its custom orders. The company specializes in highly figured hardwoods in various sizes, species, and grain patterns. It produces a line of medium- and high-end jewelry and corporate boxes and sells them to the retail gift trade. Frequently, six different wood species are used in a jewelry box with classification of the box based on color—dark, medium, or light—rather than on species composition. Hessenthaler chooses not to use a single species of wood in a box in the event he might use up his supply of the species, forcing him into the community to “hunt” for the species. He does not want to become, in his words, “an urban forest tree predator.” The company also produces candle holders and trophy golf ball holders.

Hessenthaler believes the most important aspect of urban sawlog utilization is to “sell what you make.” There are perhaps over 300 jewelry box and case-making firms in the United States, as well as individual hobbyists, and European and Asian producers. Hessenthaler does not see the other case makers as competitors, but rather as potential customers for mini-bookmatch panels for case tops and for special case hardware that he has patented.

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Gift store owners are receptive to the idea of selling products made from urban trees and are eager to display the brochures that describe the environmental friendliness of the products. Actual retail sales, however, have been based more on the quality of the product and less on the source of the wood. “People will not buy your product just because it is environmentally friendly,” he concedes.



Urban Forest Woodworks specializes in hand-crafted products such as jewelry boxes featuring book-match panels. Photo by George Hessenthaler



An indoor production area of 6,000 square feet annually transforms 30,000 board feet of lumber into value-added products. Photo by George Hessenthaler

### **Manufacturing Equipment**

Hessenthaler estimates that during his first 5 years of operation he invested \$250,000 in wages, equipment, logs, and incidentals, and essentially had a break-even operation. Because Urban Forest Woodworks mills its wood and manufactures retail products, the business has equipment for both phases of the work. Logs are sawn on a Wood-Mizer LT30 portable bandsaw equipped with a 18-horsepower electric motor. Hessenthaler's self-built kiln can dry 4,000 board feet of green hardwood lumber in 25-35 days. Remanufacturing equipment includes a 36-inch-wide dual head abrasive planer and wide-belt sander, 24-inch Rockwell planer, and other standard wood shop equipment including several custom case-making sanders, shapers, routers, and saws.

### **Obtaining Logs**

Annually, Hessenthaler mills about 50,000 board feet of logs to produce approximately 30,000 board feet of usable lumber. He can saw logs of various sizes but prefers all logs to have a minimum diameter of 12 inches and a minimum length of 3 feet. End-coating is used on all log

ends to keep the logs from drying too quickly in the Utah climate. Hessenthaler has three rules he tries to follow when obtaining logs:

1. Not to cut down trees. (He lets a professional do it.)
2. Not to haul trees. (Log trucks are expensive to buy.)
3. Not to pay more than “firewood prices” for better logs.

In 12 years Hessenthaler estimates he has salvaged over 7,000 logs (250,000 board feet), diverting them from landfills into beautifully handcrafted products. He proudly proclaims, “By using discarded logs I’m doing my part to preserve the environment, particularly in rescuing the wood from our overcrowded landfills.” He goes on to say, “Anything made of wood can be made of urban forest wood.”

**For additional information:**

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Urban Forest Woodworks  
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**Reference**

Plumb, Tim R.; Wolf, Marianne M.; Shelly, John. 1999. California urban woody green waste utilization. Technical Report 8. San Luis Obispo: California Polytechnic State University, Urban Forest Ecosystem Institute; (May) 218 p.

## RECYCLING WOODY MATERIALS FROM A LANDFILL

*SLATER INDUSTRIES DEMOLITION LANDFILL  
LEWISVILLE, NORTH CAROLINA*

Joe Slater and his father, Frank, have operated an inert material landfill and recycling business for 10 years near Winston-Salem, North Carolina. Joe is a graduate of North Carolina State University's furniture manufacturing and management program and is an accomplished machinery fabricator. Frank is semiretired and an accomplished cabinetmaker.

### Eye for Wood Prompts Purchase of Sawmill

The Slater landfill and recycling operation primarily receives brush, stumps, logs and concrete. The source of the woody material typically is from tree service firms and land clearers. Because of their furniture backgrounds, the Slaters have an eye for wood and hate to see good logs go to waste or to the chipper. Because the chip market in their area is weak, they decided to purchase a portable sawmill to convert landfilled logs into usable lumber products. Joe's father-in-law, Jim Millirons, was recruited to handle much of the sawing during normal operations.

The Slater's mill is a Cook Accu-Trac and comes equipped as a portable mill; however, the Slaters did not need the portability once the mill was towed to their North Carolina site. They removed the wheels, trailer hitch, and lighting system, and constructed some additional jacks to keep the mill stable. The mill was mounted under a tarp on a recycled concrete floor to protect it from the elements. A permanent shelter will eventually be built.

### Recycling at the Landfill

Of the 13 landfills in Forsyth County, only the Slaters operate a recycling business. Their philosophy is "what comes in, goes out." Besides lumber products, such as packaging timber and survey stakes (sold to local utilities and land surveyors in 9- to 36-inch lengths, from pine, gum, and yellow-poplar), they produce mulch, topsoil, and crushed concrete products. The younger Slater is also sawing framing lumber and hardwood "grade" lumber for a house he is planning to build.

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*"... I make my  
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Wood arrives at the Slater landfill in all sizes and shapes. Photo by Urs Buehlmann

### **Sawmill Complements Recycling Business**

In a typical week the sawmill runs 2 or 3 days, which nicely complements the regular down time associated with the landfill and recycling business. Daily maximum production is around 2,500 board feet in a wide range of pine and hardwood species. The mill can handle from 5- to 38-inch diameter logs up to 24 feet long. Large logs, up to 60 inches in diameter, are first quartered with an Alaskan chainsaw before loading on to the mill for sawing. Occasionally an individual will deliver a log for custom sawing. For example, one large urban black cherry tree was custom sawn for a homeowner, yielding 1,400 board feet of lumber.

To speed up the lumber processing, a three-blade Morgan edger was added after the first year of operating the mill. Having the edger has enabled the Slaters to use the sawmill exclusively to saw logs. Plans include the purchase of a small dry kiln to produce value-added products, as well as a tub grinder for processing lower quality material into mulch.



Stakes produced at the Slater landfill are a value-added product sold to utility companies and land surveyors.

Photo by  
Urs Buehlmann

### **Products and Markets**

Producing timber packaging products (3 by 4 inches, by 8 feet long) has suited the Slaters, because this market accepts lumber from the wide array of species and quality of logs brought to the landfill. If the Slaters started sawing for a specific hardwood grade market they would likely need to go out and look for logs. This would put them into the log buying business, which they want to avoid.

The Slater's receive about 28 cents per board foot for their packaging lumber, which they sell primarily to a structural steel fabricator. They have



Large logs are recovered for lumber, and the remaining wood goes to other uses such as mulch. Photo by Urs Buehlmann

sold air-dried red oak lumber for 60 cents per board foot. Occasionally, air-dried cherry, walnut, or quarter-sawn oak brings as much as \$1 per board foot. Major customers for the higher quality lumber are local hobbyists and furniture makers. The Slaters also have been successful in marketing their higher quality mulch, which is produced using rented tub and horizontal grinders, to landscapers for \$12 to \$16 per cubic yard.

### **Operating Philosophy**

The Slater's have a simple and straightforward operating philosophy: recycle as much as possible by generating useful products to extend the life of the landfill. Their goal is to run a neat, clean, and sustainable business. Joe commented, "It's not play, but I make my living from the landfill."

**For additional information:**

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**Reference**

Denig, Joe. 1999. Portable sawmill review. *Independent Sawmill and Woodlot Management* 3(1): 5-7, 33-35.