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Environment and Natural
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Recycling Works

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Tissue Group Needs Local Fiber Supply

By Matt Todd, Market Development Specialist

Founded in 1964, Cascades Inc. produces, transforms and markets packaging products, tissue papers and fine papers composed mainly of recycled fibers. The company employs 15,600 people working in 140 facilities located in North America, Europe and Asia.

Rockingham's Cascades Tissue Group has been producing tissue paper products since 1983. The site dates back to the late 1800s, beginning life as a textile plant, then owned by several other paper companies before being bought by Cascades.

The plant performs deinking, paper making and converting operations all under one roof. The 200,000-square-foot plant produces 100 percent recycled material and relies upon 200 tons per day of sorted office paper as feed-stock.

The Rockingham tissue facility employs 143 people, running three shifts per day. In addition to its own trademark brands, Cascades Tissue Group is a major supplier of private-

label products for major chains and drug-stores. Its innovative line of bathroom tissue, paper towels, paper hand towels, facial tissue, paper napkins and other related products are offered under various brand names such as "Cascades," "Doucelle" and "Capri" for the retail market, and "New Horizon," "North River," "Décor" and "Perkins" for the commercial and industrial markets.

Although Cascades continues to thrive, it strives to be a more integral part of North Carolina's recycling economy. Mill Manager Mike Kitner has a vision of working toward a closed-loop recycling system for the state's office waste paper.

"We are one of the few consumers of office waste paper in the state and yet some 90 percent of our fiber supply comes from outside North Carolina and 90 percent of our products are sold outside the state," said Kitner.

A closed-loop recycling system is one in which material (office paper in this case) collected

(See *Tissue*, Page 5)



The Décor brand is one of the many varieties of commercial/industrial paper products Cascades Inc. manufactures.

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General Assembly Acts to Encourage Growth in Recycling

By Scott Mouw, Community and Business Assistance Section Chief

New Disposal Bans

After gaining insight into the demand for some key materials and the economic development potential of recycling, legislators passed H1465, a bill banning the disposal of plastic bottles, oil filters, oyster shells and wooden pallets by Oct. 1, 2009. By passing this legislation, it's clear the N.C. General Assembly understands the difference between a waste and a commodity, as recycling businesses always have.

Materials Banned by Oct. 1, 2009

- * plastic bottles
- * oil filters
- * wooden pallets
- * oyster shells

The disposal ban recognizes the extensive infrastructure and substantial investment already in place to recycle these materials in North Carolina. The Tarheel state is home to some of the nation's largest plastics recyclers, more than 20 oil filter recycling companies and more than 100 pallet recyclers. (By contrast, although oyster shell recovery efforts are in the beginning stages, the shells are needed as "cultch" to regenerate oyster populations in North Carolina's sounds.)

The bill's lengthy implementation deadline gives generators and community recycling programs time to implement source reduction methods and begin recycling efforts. As passed, the bill still allows pallets to be disposed in construction and demolition landfills. But the General Assembly sent the message that it wants these materials recycled and not disposed, all with an eye on helping the state's recycling economy grow.

N.C. Bars and Restaurants Must Recycle

For recycling to reach the next level in North Carolina, many people point to the commercial sector as an under-performing source of recoverable materials. This perspective was the underlying basis

for another enacted bill, H1518, which requires Alcohol Beverage Control license-holders to start recycling programs for their beverage containers by Jan. 1, 2008. The initiation of recycling programs in bars and restaurants across North Carolina should provide a boost to plastic, aluminum and especially glass recovery - welcome news to the state's many collectors, processors and end users of these materials.

Automobile Mercury Switch Recycling Incentives

The General Assembly also addressed an issue that threatened one of the oldest recycling practices - the salvaging of automobile metals. Steelmakers across the United States, including North Carolina's own Nucor, have become increasingly concerned about the presence of mercury on shredded metal that feeds their scrap-based plants. Mercury found in electrical switches can be released onto scrap through the shredding process and as the metal is melted at the steel plants, the mercury escapes as an undesired and dangerous air emission from plant stacks.

After national negotiations failed to produce an agreement to address this problem on a voluntary

(See **Growth**, Page 4)



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Office Paper Recovery

By Matt Todd, Market Development Specialist

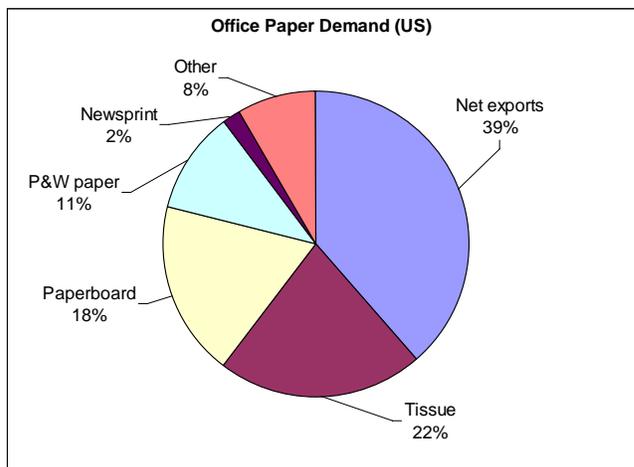
In 2004, North Carolina generated almost 216,500 tons of office paper. However, that same year, only 104,000 tons of office paper was recovered in the state, yielding a recovery rate of about 48 percent. Recovery of office paper occurs primarily from offices and businesses in North Carolina, accounting for about 97 percent of the total recovery in 2004.

SOP consists of baled paper containing primarily white and colored groundwood-free paper, free of unbleached fiber. Although a majority of paper meeting this description is generated and recovered from offices, it also comes from homes and other commercial activities.

The office grade market has seen movement up and down as the industry continues to determine the viability of various "office paper" grades. Throughout this process, sorted office paper has been one of the few to be deemed viable.

For a general look at the end uses of recovered office paper in the United States, we can refer to American Forest & Paper Association's demand estimates for recovered printing and writing papers. U.S. export tonnage jumped 24 percent from 1997 to 2003 accounting, for 39 percent of demand.

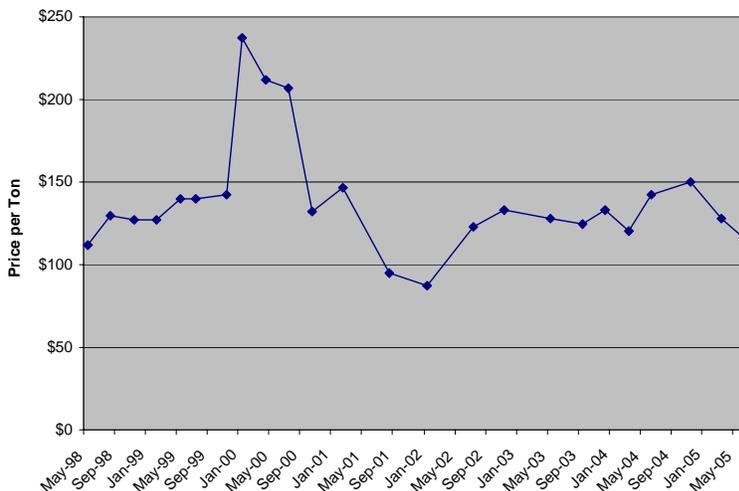
The primary domestic markets for recovered P&W papers are tissue, new P&W papers and recycled paperboard, according to AF&PA. The chart above shows the association's breakdown among various end uses for recovered P&W papers.¹



The graph below illustrates a seven-year price history for baled sorted office paper in North Carolina.² Following the trend of most paper grades in this period, sorted office paper prices spiked in March 2000 and had significantly declined by March 2002. Prices leveled off to around \$125/ton since that time, but have recently dipped to the \$85/ton range since about June 2005. The decline is attributed in part to a rise in the supply of paper from paper shredding businesses.

Recovery in North Carolina is below the national average and could be increased by local governments and private collectors working with building managers to facilitate office paper recycling, working to revitalize existing office paper recovery programs and educating generators about the need for sorted, contaminant-free office paper.

North Carolina SOP pricing trends 1998 - 2005 (mill buying price)



¹ AF&PA, *Recovered Paper Statistical Highlights*, 2004 edition.

² Prices are from NC-DPPEA's *Recycling Works*, *NC Market Prices for Recyclables*, May 1998 - May 2005.

Growth, from page 2

basis, the steel industry and others turned their attention to passing state legislation, with North Carolina being one of the first states to jump on board. H1136 sets up a reward system for scrap recyclers to remove the mercury switches prior to auto crushing and shredding. The result will be less airborne mercury at steel plants and cleaner, more attractive feedstocks available from North Carolina metal yards.

Looking Forward to 2006

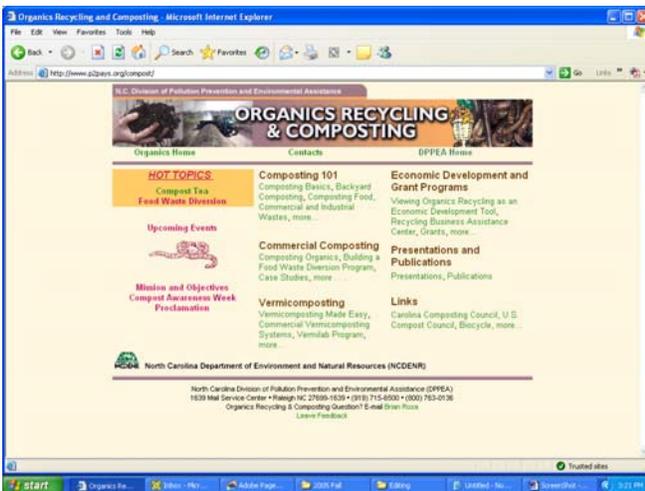
Not all of the unprecedented number of bills on recycling considered this year met with success. A couple of bills to encourage the cleanup and recycling of an estimated 40,000 mobile homes in the state failed to get traction. The attempt to pass an advanced recycling fee on electronics to put North Carolina ahead of the curve on the growing e-waste problem also did not see committee action. But

the bill did attract a much broader level of interest from key groups and is poised for consideration in the 2006 General Assembly short session. The disposal ban bill, H1465, also lost a key component early when, under pressure from the N.C. Homebuilders Association, clean wood waste was removed from the disposal ban list.

Still, 2005 was a banner year for recycling legislation. The bills passed were a victory for the idea that recyclable materials are not trash, but instead valuable commodities that are needed by industry to make a wide range of products.

For more information on 2005 legislation, see the N.C. General Assembly Web site at: www.ncga.state.nc.us, or call Scott Mouw at (919) 715-6512.

North Carolina's New Composting Web Site!



There's a new place to find out everything you need to know about personal or commercial composting – from how to compost food waste, to vermicomposting basics and how to make your own compost tea. North Carolina's new one-stop information source about everything compost, including local and national contacts, is up and ready to help at www.p2pays.org/compost. Comments or suggestions? Contact North Carolina's Organic Recycling Specialist Brian Rosa at (919) 715-6524 or brian.rosa@ncmail.net.

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Tissue, from page 1



Rockingham's Cascades Tissue Group installed Paper Machine No. 2, a Voith Crescent Fromer, in 1999.

sions all use the same tissue and towel products that we produce in Rockingham," said Kitner. "I would like to work toward closing the loop on generated waste paper within the state. We could recover the fiber and reuse it to produce products that are again consumed within the state."

The company continues to invest in machinery upgrades and converting efficiencies to remain competitive and produce quality products. The most recent upgrade includes the 1999 installation of Paper Machine No. 2, a new Voith Crescent Fromer paper machine.

Upgrades continue with proposed expansion and improvement to its converting operations. The facility is exploring

from a customer is sold back to them as a finished product.

"The businesses as well as the state of North Carolina and its many divi-

adding more bath tissue converting capacity. Additional work is planned for this year to improve the efficiency of the deinking plant. This work is required to better handle the deteriorating quality of the waste stream brought on by document destruction and paper shredding operations.

Cascades Tissue Group is one of only a few of the state's end users of sorted office paper. Material is currently sourced from all over the region, as far south as Florida and as far north as Ohio. Since about 20 percent of the cost of a ton of waste paper is freight, the Rockingham plant is interested in sourcing material from more North Carolina suppliers.

"If we were able to use the waste generated within the state it would help to reduce our raw material cost by reducing transportation costs, which would obviously improve our ability to grow our business in North Carolina," Kitner stated.

Any interested suppliers of sorted office paper or other available grades of office waste paper can contact Mike Kitner, mill manager at (910) 895-4033, or mike_kitner@cascades.com. To learn more about Cascades Inc., visit its Web site at www.cascades.com.

Loan Fund Director Leaving Self-Help



Fred Broadwell, Self-Help/RBAC Recycling Business Loan Fund manager since its inception in 1999 and a valued contributor to the recycling business community, is leaving North Carolina's community development banking group. During his tenure at Self-Help, 12 North Carolina-based recycling companies have received almost \$2.2 million in loans through the fund resulting in an addition or retention of 133 recycling industry jobs.

Prior to joining Self-Help, Broadwell managed the Alameda County, Calif., Recycling Loan Fund, which makes loans to recycling companies throughout the San Francisco Bay Area, and was economic development manager for the Materials for the Future Foundation. In addition to his duties at Self-Help, Broadwell also served as North Carolina co-chair of the Carolina Recycling Association's policy committee.

Environmentally Preferable Purchasing

- What are North Carolina state agencies and universities doing in green procurement?
- Where can local governments, schools and businesses find examples of policies, specifications and studies on recycled content and environmentally preferable products and services?

www.p2pays.org/epp

Learn how to green your purchases!

From High-End Furniture Manufacturer To Furniture Recycler

By Sherry Yarkosky, Market Development Specialist

Battered by the downturn in the economy and the flood of cheap imports, in summer 2004, Young-Spangle Inc. was forced to close its small 25-year-old, family-owned, custom-made upholstered furniture manufacturing business.

Not being the type of people to give up easily, owners Kay and Stan Spangle, both in their 70s, decided to revamp their business model to continue working in the furniture business.

"I'm not ready to throw in the towel and retire," said Kay Spangle. "I feel that I have a lot to offer and I also want to help provide a few good jobs to people that desperately need work."

The manufacturing plant's closing resulted in the elimination of 12 positions. "That was the hardest thing in the world to do," said Spangle. "In addition to being highly skilled workers, our employees were like family." Kay and Stan hope to be able to exist on a smaller scale by making the switch from custom furniture manufacturer to remanufacturing high-quality furniture.

In today's disposable society, opportunities to refurbish good furniture are sometimes lost. It is a common misconception that refurbishing furniture will cost more than buying new.

"Well that depends on how you look at it," said Kay Spangle. "Sure it can be cheaper in the short run if you purchase a

poorly-made, inexpensive piece of furniture that will only last a few years. However, it is often cheaper to remanufacture a high quality piece of furniture than it is to buy new."

Spangle went on to say refurbishing furniture will make it last longer and will keep good furniture from being thrown in a landfill.

As you can see from the "before" and "after" photos shown below the Spangle's skilled workforce transformed an old couch into a beautiful contemporary piece that could well last another 35 years. The couch was not simply recovered with new fabric. The springs were tightened, new cushions and pillows were made and the frame was even modified for a more modern appearance. The total cost including the fabric was less than \$750 ~ a bargain considering you'd be hard pressed to find a cheaply made couch for that amount.

The Spangle's have more than 30 years in the business and have a passion for good craftsmanship. They provide furniture-refurbishing services within a 100-mile radius of High Point. For more information, contact Kay Spangle at (336) 884-4535.

Before



After



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New Web Site Encourages Paper Recycling

By Scott Mouw, Community and Business Assistance Section Chief



The paper industry is serious about getting more fiber and has launched a Web site to do something about it: www.paperrecycles.org.

The site, sponsored by the Paper Industry Association Council, contains excellent data, factoids and resources about paper recycling and paper in general. Local recycling programs, teachers, environmental educators and companies in the paper recycling business who need to get information out to the public and clients

on the importance of paper recycling will find this site useful. It is designed to help support the achievement of the paper industry's aggressive 55 percent recovery goal by 2012.

North Carolina still has a great deal of fiber available for recovery in its waste stream. Even highly recycled grades such as newsprint and corrugated cardboard have room for growth, while office paper, residential mixed paper, magazines and catalogs all have greater potential for higher recovery. The southeast United States is also rich in paper mills looking for additional fiber. For an example, see the article on p. 1 about North Carolina's Cascades Tissue mill.

From Ashes to Assets

By Robert Mensah-Biney, NCSU Minerals Research Laboratory & Elaine Marten, Waste Reduction Partners

In October 2000, the N.C. State University Minerals Research Laboratory and Waste Reduction Partners (a western N.C. program of retired technical volunteers) initiated a program bringing together industry, academia and state agencies to establish the Carolina Ash Products Consortium. Its purpose was to explore new product development using nearly 100 percent coal combustion byproducts and organic biosolids.

The consortium is now overseeing the Integrated Pilot Plant project currently underway at NCSU's Asheville MRL facilities. This initial pilot plant will process about 25 tons of coal ash during its test run. These bulk quantities of building products will be evaluated for market, the goal being to generate a family of products equivalent to or surpassing commercial products made from virgin materials. In addition, the pilot plant testing will provide reliable operation data for future commercial plant design.

(See *Assets*, Page 8)

Recycling Works is published by the N.C. Recycling Business Assistance Center, a program of the Division of Pollution Prevention and Environmental Assistance of the N.C. Department of Environment and Natural Resources. For more information call (919) 715-6500 or (800) 763-0136, or write to DPPEA, 1639 Mail Service Center, Raleigh, NC 27699-1639.

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SAVE THE DATE!



The Carolina Recycling Association's 16th Annual Conference and Trade Show will be held March 21-24, 2006 at the North Raleigh Hilton. This year's theme is "Recycling: A Capital Idea."

Look for a conference preview article in the next issue of *Recycling Works*.

See you in Raleigh!

Assets, from page 7

In early 2004, the NCSU MRL submitted a proposal to the CAP Consortium to undertake the research and development project. The process mixes ash (wet or dry) into four saleable products ~ carbon, fly ash, bottom ash and synthetic lightweight aggregates. Following research and development, the pilot plant took shape. The program required the manufacturing processes to be environmentally sound and economically viable.

The current CAP stakeholders provided strong financial support for the integrated program. MRL and the Waste Reduction Partners committed technical and professional in-kind services, and the Land-Of-Sky Regional Council is providing program management assistance.

In addition to funding from the N.C. Division of Pollution Prevention and Environmental Assistance and the N.C. Rural Center, the project has attracted the attention and funding of Progress Energy Carolinas Inc., Duke Energy, Full Circle Solutions and Ecusta Business Development Center (furnishing the final pilot plant site and building).

The power companies supplied power plant ash byproducts to be processed in the pilot plant. Miller Perlite supplied perlite byproduct "fines" as raw material for the development work.



CAP Consortium Members at the NCSU Minerals Research Laboratory's Asheville Pilot Plant. (l-r, front) Mark Barker, Matt Ewadinger, Robert Mensah-Biney, Elaine Marten, Ron Townley; (l-r, back) Ken Butcher, Thomas Edens, Bill Ashbrook, Bob Waldrop, Tom McCullough.

The budget for the pilot plant's first phase of operation is approximately \$390,000. The MRL successfully started up the pilot plant in September 2005.

With the successful trial run of the pilot facility, the MRL and CAP consortium hope to attract commercial investors to construct and operate a full-scale production plant for this innovative process.

The Land-of-Sky Regional Council has secured an additional \$126,000 in funding to further promote the economic development of this process. A second phase of the pilot plant's operation will be conducted at Transylvania County's Ecusta Business Development Center in early 2006. A full-scale plant could potentially to process about 100,000 tons per year of ash byproducts and could employ a staff of 15 or more people.

For more information about the CAP project, contact Robert Mensah-Biney, Ph.D. NCSU Minerals Research Laboratory, (828) 251-6155 ext. 224, e-mail: Mensah@eos.ncsu.edu.

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North Carolina market prices for recyclables

Prices current as of Oct. 4, 2005

Item	Western Region	Central Region	Eastern Region
METALS			
Aluminum Cans, lb. loose	\$0.6125	\$0.38	\$0.65
Steel cans, gross ton baled	\$83	\$83	\$85
PLASTICS			
Central Region markets plastics together			
PETE, lb. baled	\$0.20	\$0.16	\$0.19
HDPE, lb. baled	Natural	\$0.31	\$0.27
	Colored	\$0.24	\$0.24
PAPER			
Newsprint, ton baled	\$85	\$80	\$87.55
Corrugated, ton baled	\$85	\$80	\$87.50
Office, ton baled	\$80 (SOP)	\$85 (SOP)	\$180 (white ledger)
Magazines, ton baled	*	\$85	**
Mixed, ton baled	\$45	\$50	\$50
GLASS			
Eastern Region sells glass F.O.B. origin			
Clear, ton crushed delivered	\$40	\$26	\$17
Brown, ton crushed delivered	\$35	\$16	\$21
Green, ton crushed delivered	\$15	\$0	(\$9)

*Markets with mixed paper.

**Markets with newsprint.

Note: Prices listed above are compiled by RBAC and are for reference only. These prices are not firm quotes. RBAC obtained pricing information from processors for each category and developed a pricing range.

Visit RBAC online at <http://www.p2pays.org/rbac>

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