

## N.C. Stats and Facts With Calculations

### Trash

\* Data below from NC DWM - [http://www.wastenotnc.org/DATARPTS2003\\_3ColA.HTM](http://www.wastenotnc.org/DATARPTS2003_3ColA.HTM) and NC DPPEA.

Every year, North Carolinians throw away enough trash to circle the earth twice.

\*11.8 million tons sent to landfills each year X 2000 pounds = 23.6 billion pounds

\*23.6 billion pounds / 250 lbs/cu yd = 94.4 million cu yds

\*9.4 million cu/yd X 3 ft/cu yd = 283.2 million ft

\*283.2 million ft / 5280 ft/mile = 53,636 miles

\*25,000 miles in Earth's circumference

\*53,636 miles / 25,000 miles = 2.14 times around

The trash we throw into the landfill each year in North Carolina is equivalent to the weight of 7,866,666 cars a year!

\*11.8 million tons sent to landfills each year

\*11.8 million tons X 2000 pounds = 23.6 billion pounds

\*3,000 pounds is the average weight of a car

\*23.6 billion / 3000 pounds = 7,866,666 cars

The amount of waste disposed in North Carolina has increased from 6.8 million tons in 1991 to 11.86 million tons in 2007.

With the amount of trash North Carolinians throw away, we fill enough Dumpsters to line the N.C. coastline more than nine times every year.

\*7,129 Dumpsters/day x 5.58 feet long Dumpster = 39,779.82 feet of Dumpster/day

\*39,779.82 feet of Dumpster/day / 5280 ft/mile = 7.534 miles of Dumpster/day

\*7.534 miles of Dumpsters/day x 365 days/year = 2,749.93 miles of Dumpster/year

\*2,749.93 miles of Dumpsters/year / 300 miles long NC Coastline = 9.166 times per year

Every 40 days, North Carolinians throw away enough trash to fill Dumpsters lining the entire North Carolina coastline.

\*7,129 Dumpsters/day x 5.58 feet/Dumpster = 39,779.82 feet of Dumpsters/day

\*39,779.82 feet of Dumpsters/day / 5280 ft/mile = 7.534 miles of Dumpsters/day

\*300 miles long NC Coastline / 7.534 miles of Dumpsters/day = 39.81 days

The amount of trash North Carolinians throw away in 3.5 hours would fill Dumpsters that reach as high as Mt. Mitchell. That's 6,684 feet!

\*7,129 Dumpsters/day X 6.5 feet high/Dumpster = 46,338.5 feet of Dumpsters/day

\*46,338.5 feet of Dumpsters/day / 6,684 feet = 6.9 times per day

\*24 hours / 6.9 times per day = approximately 3.5 hours

With the amount of trash North Carolinians throw away, we would fill enough Dumpsters to line the length of N.C.'s Interstate 40 more than six times in one year. That's almost 2,750 miles of Dumpsters each year.

\*7,129 Dumpsters/day x 5.58 feet/Dumpster = 39,779.82 feet of Dumpsters/day

\*39,779.82 feet of Dumpsters/day / 5280 ft/mile = 7.534 miles of Dumpsters/day

\*7.534 miles of Dumpsters/day x 365 days/year = 2,749.93 miles of Dumpster/year

\*2,749.93 miles of Dumpsters/year / 420 miles of Interstate 40 = 6.547 times

Every 55 days, North Carolinians throw away enough trash to fill Dumpsters lining the entire route of I-40 in North Carolina. That's 420 miles.

\*7,129 Dumpsters/day x 5.58 feet/Dumpster = 39,779.82 feet of Dumpsters/day

\*39,779.82 feet of Dumpsters/day / 5280 ft/mile = 7.534 miles of Dumpsters/day

\*420 miles of Interstate 40 / 7.534 miles of Dumpsters/day = 55.74 days

The state picked up more than 10 million pounds of litter in 2007. That is more than one pound of litter for each of the state's 8.86 million citizens.

\*Data from NC DOT - [http://www.ncdot.org/doh/operations/dp\\_chief\\_eng/roadside/Beautification/events/](http://www.ncdot.org/doh/operations/dp_chief_eng/roadside/Beautification/events/)

North Carolinians throw away enough trash to fill Dumpsters from:

- Asheville to Apex every 30 days
- Asheville to Asheboro every 26 days
- Boone to Bald Head every 47 days
- Burlington to Beaufort every 26 days
- Carrboro to Carolina Beach every 21 days
- Charlotte to Cary every 20 days
- Charlotte to Shelby in just under a week
- Chowan to Cherokee every 68 days
- Clayton to Concord every 21 days
- Conover to Conetoe every 31 days
- Duck to Durham every 30 days
- Greensboro to Goldsboro every 20 days
- Monroe to Manteo every 44 days
- Winston Salem to Wilmington every 29 days
- Winston Salem to Wilson every 20 days

\*11,865,829 tons disposed per year (NC Solid Waste Mgt Annual Report – FY 06-07)

\*32,509 tons disposed per day

\*31,536,000 seconds per year

\*11,865,829 tons disposed x 2000 pounds = 23,731,658,000 pounds disposed

\*23,731,658,000 pounds / 31,536,000 seconds = 752.5 pounds of waste per second

\*1 Dumpster = 5.58 feet long; 6.5 feet tall (or 8 cubic yards in volume)

At .57 tons/yard and 1140 lbs/yard (per Jim Hickman), that's

- 4.56 tons per Dumpster (.57 x 8)
- 2,602,155 Dumpsters/year (11,865,829/4.56)
- 7,129 Dumpsters/day
- 7.5 miles of Dumpsters/day ((7,129 x 5.58 feet)/5,280 feet/mile))
- 2,750 miles of Dumpsters/year

### Recycling

Only half of aluminum cans are recycled despite a statewide disposal ban on the material. Other items banned from disposal in North Carolina landfills include whole tires, appliances (white goods), yard waste, lead acid batteries, used oil and antifreeze.

\* Data from NC DWM – <http://www.wastenotnc.org/laws.htm#state>

North Carolinians recycle 85.4 pounds of materials a second. That's impressive! But we throw away over 752 pounds of trash a second. That's almost nine times what we recycle.

\* Data from NC DWM - [http://www.wastenotnc.org/DATARPTS2003\\_3CoIA.HTM](http://www.wastenotnc.org/DATARPTS2003_3CoIA.HTM) and NC DPPEA.

\*1,346,635 tons recycled each year (FY 06-07)

\*31,536,000 seconds per year

\*1,346,635 tons x 2000 pounds = 2,693,270,000 pounds

\*2,693,270 pounds / 31,536,000 seconds = 85.4 pounds per second

Construction and demolition is the largest waste stream in the state, accounting for about 32 percent of all disposed waste. Recycling facilities are being developed around the state for these materials. Habitat for Humanity operates "Re-Stores" in some North Carolina communities, accepting donations and selling reusable construction materials.

\* Data from NC DWM - [http://www.wastenotnc.org/DATARPTS2003\\_3CoIA.HTM](http://www.wastenotnc.org/DATARPTS2003_3CoIA.HTM) and NC DPPEA - <http://www.p2pays.org/dmrm/start.aspx>

NC throws away about 270 million dollars worth of recyclable goods each year.

\*Data from Scott's Commodity Summary/Waste Stream Analysis and RBAC newsletters - <http://www.p2pays.org/rbac/newsletters.html>

Aluminum and glass companies rely heavily on secondary materials for their product, and many plastics manufacturers also depend on recovered material.

Ultimately, the major industrial sectors would suffer severe difficulties if the supply of recycled materials suddenly disappeared.

\*Data from - <http://www.p2pays.org/dmrm/start.aspx>

Recycling in North Carolina is a job creator and a growing part of our state's economy. Recycling employs more than 14,490 North Carolinians and recycling jobs have increased about 13 percent in the last four years.

The state's 1994 edition of the *Directory of Markets for Recyclable Materials* listed 306 companies; in 2008 that number was up to 581, for a 90 percent rise in only 14 years. That means more materials are being recovered, more jobs are being created, and more money is flowing through our economy – all because of recycling!

A 2003 study found that private sector recyclers employed 12,776 people across the state. A similar study in 2008 documented 14,490 employed in recycling industry, an increase of over 13 percent in only four years. If we assume a low average wage of \$25,000/year for these workers, recycling creates a \$377 million payroll for North Carolina each year, which is plowed back into the economy through consumer purchasing, home-buying, savings in local banks, and paying of property and income taxes.

### Aluminum

North Carolinians throw away more than \$74,072,000 in aluminum cans each year.

\*37,036 tons of aluminum thrown away each year x 2000 pounds = 74,072,000 pounds

\*\$1 per pound on average in revenue from the sale of aluminum cans

- Recycling an aluminum can saves 95 percent of the energy required to make the same amount of aluminum from virgin materials.
- The pollutants created in producing one ton of aluminum include 3,290 pounds of red mud, 2,900 pounds of carbon dioxide (a greenhouse gas), 81 pounds of air pollutants and 789 pounds of solid wastes. *More info found at the Aluminum Association - [http://www.aluminum.org/AM/Template.cfm?Section=News\\_Statistics](http://www.aluminum.org/AM/Template.cfm?Section=News_Statistics)*

### Glass

\* Data below from NC DWM - [http://www.wastenotnc.org/DATARPTS2003\\_3CoIA.HTM](http://www.wastenotnc.org/DATARPTS2003_3CoIA.HTM) and NC DPPEA.

N.C. throws away enough glass each year to fill up over 11,800 tractor-trailers. If you put those tractor-trailers end to end they'd stretch from Asheville to Greensboro.

\*260,000 tons of glass thrown away each year / 22 tons of glass per tractor-trailer = 11,800 tractor-trailers per year

\*70 feet in length per tractor trailer X 11,800 tractor-trailers = 826,000 feet = 156.4 miles

\*156 miles from Asheville to Greensboro

Each month, North Carolinians throw out glass that would fill up more than 13 miles worth of tractor-trailers lined up end-to-end. That's a half marathon of tractor-trailers each month!

\*260,000 tons of glass thrown away each year / 22 tons of glass per tractor-trailer = 11,800 tractor-trailers per year

\*70 feet in length per tractor trailer X 11,800 tractor-trailers = 826,000 feet = 156.4 miles

\*12 months per year = 13 miles

- Glass bottles can be used hundreds of times over to make new bottles. North Carolina has three glass plants capable of consuming thousands of tons of "cullet" or recovered glass.

- Producing glass from virgin materials requires 30 percent more energy than producing it from crushed, used glass. *More info found at Glass Packaging Institute - <http://www.gpi.org/recycling/environment/>*

### Paper

North Carolinians throw away more than \$164,375,460 in mixed paper each year.

\*1,730,268 tons of paper thrown away each year

\*\$95 per ton on average in revenue from the sale of mixed paper

Each year, N.C. throws away enough potentially recyclable paper to fill over 1000 soccer fields three feet deep.

\*Paper (ONP, OCC, MAG, OOP) not recycled 1,730,268 tons = 3,460,536,000 lbs

\*370 lbs/yd cubed for paper according to standards

\*3,460,536,000 lbs / 370 lbs/yard cubed = 9,352,800 yd cubed

\*9000 sq yd per soccer field at 1 yd depth (or 3 ft) so it equals 9000 yd cubed

\*9,352,800 yd cubed / 9000 yd cubed = 1039.2 soccer fields three feet deep

Last year NC trashed enough paper to fill 1558 football fields three feet deep.

\*Paper (ONP, OCC, MAG, OOP) not recycled 1,730,268 tons = 3,460,536,000 lbs

\*370 lbs/yd cubed for paper according to standards

\*3,460,536,000 lbs / 370 lbs/yard cubed = 9,352,800 yd cubed

\*6000 sq yd per football field at 1 yd depth (or 3 ft) so it equals 6000 yd cubed

\*9,352,800 yd cubed / 6000 yd cubed = 1558 football fields three feet deep

- Almost 80 percent of U.S. paper mills rely on recovered recycled paper. In fact it supplies 37 percent of their material.
- Producing recycled paper requires about 60 percent of the energy used to make paper from virgin wood pulp.
- One ton of uncoated virgin (non-recycled) printing and office paper uses 24 trees.
- Producing recycled paper causes 74 percent less air pollution and 35 percent less water pollution than producing virgin paper.
- One ton of paper made from recycled scrap paper saves 7,000 gallons of water.
- Recycled paper production uses 59 percent less water compared to paper production from virgin resources. Typically, older virgin paper mills will use 100 pounds of water to make one pound of paper. *More info found at the American Forest and Paper Association - <http://stats.paperrecycles.org/>*

### Plastic

North Carolinians throw away more than \$41,411,600 in plastic each year.

\*103,529 tons of PET and HDPE thrown away each year x 2000 pounds = 207,058,000 pounds

\*\$.20 per pound on average in revenue from the sale of PET and HDPE

- Producing new plastic from recycled material uses only two-thirds of the energy required to manufacture it from raw materials. *More info found at The American Chemistry Council - <http://www.americanchemistry.com/>*

### Steel

North Carolinians throw away more than \$16,819,500 in steel each year.

\*56,065 tons of steel thrown away each year

\*\$300 per ton on average in revenue from the sale of steel

Steel is one of the most recycled materials with a 68 percent national recycling rate. Many steel products are recycled at a high rate in North Carolina, though less than 15 percent of steel cans are recovered.

\* *Data from NC DWM - [http://www.wastenotnc.org/DATARPTS2003\\_3CoIA.HTM](http://www.wastenotnc.org/DATARPTS2003_3CoIA.HTM) and NC DPPEA.*

- Nearly all the steel made in the U.S. and in the world is made from scrap.
- Every ton of steel recycled saves 2,500 pounds of iron ore, 1,400 pounds of coal and 120 pounds of limestone.

- Recycling one ton of steel reduces air pollution by 86 percent and water pollution by 76 percent, and saves 74 percent of the energy and 40 percent of the water that would have otherwise been used.

**Individual commodity calculations created with this data:**

NC only recycles half of what it can. Annually there are roughly more than 2,000,000 tons of traditional recyclables remaining in North Carolina's waste stream. These include paper, glass, #1 and #2 plastic, aluminum cans and steel cans.

<b>Commodity</b>	<b>Tonnage Generated</b>	<b>Percent Recovered</b>	<b>Tonnage Remaining in Waste Stream</b>
Paper**	2,092,298	17.3%	1,730,268
Glass	319,956	18.6%	260,413
PET	74,349	18%	60,995
HDPE	51,070	16.7%	42,534
Aluminum Cans	42,602	13%	37,036
Steel Cans (Bi-Metal)	65,105	13.9%	56,065
			2,187,311

\*Source = Scott's Commodity Summary/Waste Stream Analysis document

\*\* Paper includes newsprint, cardboard, magazines, office paper, and mixed paper