

1

Encyclopedia of  
**CONSUMPTION**  
and **WASTE**

The Social Science of Garbage

**Carl A. Zimring**  
*Roosevelt University*  
General Editor

**William L. Rathje**  
*University of Arizona*  
Consulting Editor

 **SAGE** |  reference

Los Angeles | London | New Delhi  
Singapore | Washington DC

In August 2004, the National Park Service mapped and recorded 229 trash features and over 260 distinct surface deposits consisting of piles and scatters of debris and coal residue. Features ranged in size from 1 m<sup>2</sup> to 4,300 m<sup>2</sup>; the largest features and the only buried features were associated with the relocation center. Disturbance of the deposits was noted in the form of bottle digging, trampling, and vehicle damage. The debris includes piles of bricks, rocks, and concrete. Often, one type of building material is dominant, and many of the piles are linear, up to 225 feet long. The relocation-era (1942–45) rubbish was systematically deposited into a prepared pit and other nearby concentrations, and these are the only features that have stratified deposits. The dump was half a mile north of the residential area. The main feature is a partly filled 370-by-100-foot trash pit from the camp; there is also potentially an earlier capped dump from the camp.

The most useful artifacts for dating were found to be (1) glass manufacturer date codes, (2) drink can types, (3) vehicle license plates, and (4) brand names and trademarks. The recent date and narrowly separated phases of the dump meant that artifacts that are usually regarded as useful date indicators in U.S. historical archaeology were of little help. Ceramic backstamps and glass manufacturer's marks remained unchanged for decades in the 20th century, and milk can dimensions were inconsistent.

It was found that many features had artifact types from more than one decade, and these were counted in each decade represented, even where they were likely to be single-dumping events. While this method of tabulation inflates the number of features per decade, it was thought more desirable than arbitrarily assigning a decade or ignoring the feature altogether. Eighty-four features were considered undatable. It was possible to date some of the relocation center dump features to within a single year.

Significant findings in the post-relocation era garbage include increasing automobile-related artifacts between the 1950s and 1960s and a notable preponderance of alcoholic drink containers associated with the World War II veteran farmers. The presence of artifacts thought to be from the relocation camp in post-relocation refuse is also surprising, as usable goods from the centers were routinely destroyed to avoid flooding local markets. The largest numbers of

features containing toys dated to the 1950s, thought to coincide with the postwar Baby Boom. It is possible that just one or two households deposited all of the post-relocation era trash. Recommendations for further work included land acquisition and fencing, additional excavation of relocation-era features, oral history collection, more recording of post-relocation center features, and hazardous materials (hazmat) evaluation.

Jon Welsh  
AAG Archaeology

**See Also:** Archaeological Techniques, Modern Day; Archaeology of Garbage; Construction and Demolition Waste; Dating of Garbage Deposition; Dump Digging; Race and Garbage.

#### Further Readings

- Arsova, Ljupka, et al. "The State of Garbage in America: 16th Nationwide Survey of MSW Management in the U.S." *BioCycle*, v.49/12 (2008).
- Burton, Jeffery F. *The Fate of Things: Archeological Investigations at the Minidoka Relocation Center Dump*. Tucson, AZ: Publications in Anthropology, Western Archeological and Conservation Centre, National Park Service, U.S. Department of the Interior, 2005.
- Camp, Stacey Lynn. "Teaching With Trash: Archaeological Insights on University Waste Management." *World Archaeology*, v.42/3 (2010).
- Nagawiecki, T. *University of Idaho Waste Characterization*. Moscow: University of Idaho Press, 2009.

## Illinois

A hub of transportation, industry, and agriculture, Illinois is a diverse state. Featuring the third-largest city in the United States, much of the population is concentrated in the Chicago metropolitan area along the Lake Michigan coast in the northeastern corner of the state. The entire western border of the state follows the path of the Mississippi River, and the Ohio River joins the Mississippi at the southernmost tip of the state. Almost 13 million residents

lived in Illinois in 2010, 5,194,675 of them in Cook County. From a consumption and waste standpoint, downstate Illinois differs considerably from the Chicago area. Most of the land area in Illinois is south of Chicago and is often just given the general designation of "downstate." Central and southern Illinois are largely agricultural areas interrupted by a few larger cities. In addition to agriculture, southern Illinois has a considerable amount of coal mining as well as some oil fields. Both of these extraction activities have led to significant waste and pollution issues downstate. Northern Illinois and Chicago have also been long-known for their steel mills. The vast majority of the iron ore is actually mined out-of-state and transported in by railway.

### History

Illinois became a state in 1818. Due to its proximity to midwest railways as well as shipping routes in the Great Lakes, the Chicago area quickly became the most densely populated region of Illinois. Given its size, consumption and waste has played a primary role in a surprisingly large number of Chicago's major historical events. As early as 1849, the city had official "scavengers" (the historical term for *garbage men*). One of the seminal events in early Chicago history was the Great Fire of 1871, which destroyed nearly four square miles in the heart of the city. Disposing of the tremendous amount of waste from the fire was the first step in the rebuilding process. Debris from the fire, and later, general city garbage was pushed from the shoreline into Lake Michigan. In the 21st century, most of what is Grant Park on Chicago's Lakefront—including Soldier Field—is built on top of old Chicago fire debris and garbage. One of Chicago's long-standing core industries is the slaughterhouse and meatpacking business. Following the Great Fire, these previously scattered businesses were consolidated into the 100-acre Union Stock Yards, southwest of the central business district.

By 1890, 12 million head of cattle were slaughtered annually, which represented a staggering 150 million pounds of animal waste. In the early days of the slaughterhouses, the majority of this animal waste was simply disposed of into the Chicago River. In fact, one fork of the Chicago River, which received much of the animal waste, was nicknamed

"Bubbly Creek" because of the bubbles that would rise to the surface from decaying animal matter. Fieldwork in the Chicago slaughterhouses helped Upton Sinclair write *The Jungle* in 1906. His novel helped to expose atrocious working and unsanitary conditions in the slaughterhouses and eventually led to the federal Meat Inspection Act. A profit-motivated push for greater efficiency in the slaughterhouse process eventually led to the repurposing of slaughterhouse waste into categories like fertilizer, lard, leather, soap, and tallow. This greatly reduced the amount of physical waste, but instead created large amounts of air pollution and hazardous working conditions in many of the rendering plants.

Environmental justice is a relatively recent reform movement, but Jane Addams of Chicago's Hull House fame was tackling environmental inequality issues in the early 1900s. Corrupt politicians and lax scavengers had allowed small mountains of garbage to accrue in the Hull House's 19th Ward. Connecting the trash problem to high levels of sickness and disease in her ward, Addams began a trash crusade by reporting thousands of trash ordinance violations to the city's Health Department. These tireless efforts eventually resulted in the mayor appointing Addams as an official city trash inspector.

Reversing the flow of the Chicago River is another major event in the history of Chicago that has its roots in waste management. In the late 19th century, Chicago had the ability to pull more than 100 million gallons of water per day from Lake Michigan. The water came from offshore intake pipes. For all of Chicago's early history, the Chicago River was used as the primary city sewer. As the city grew and wastes became more concentrated, the need to protect the city's drinking water became pressing. The solution was to create the Chicago Sanitary and Shipping Canal. This engineering feat involved excavating a 28-mile-long canal that would send Chicago's wastes downstream away from Lake Michigan and create a convenient shipping lane to the Illinois River. The opening of the canal in 1900 effectively reversed the natural flow of the Chicago River and caused decades of strife with cities downriver that now had to deal with Chicago's wastes.

As Chicago continued to grow, so did its waste generation. By mid-century, waste collection had become a lucrative business, and organized crime

tended to follow profitable industries. Dutch immigrants had a long history of managing most of the city's waste hauling contracts. Their market share grew even more when, in 1959, the Dutch Mafia consolidated its waste hauling businesses under the name Chicago and Suburban Refuse Disposal Association. Not to be left out of the graft, the Italian Mafia was quick to follow suit under the leadership of Willie Daddano. Daddano, nicknamed "Willie Potatoes," formed the West Suburban Scavenger Service in 1960 and used mob contacts, threats, and intimidation to take over waste hauling contracts. Corruption and graft in the garbage business did not end with the mob's involvement. From 1992 to 1996, the Federal Bureau of Investigation conducted an investigation called Operation Silver Shovel. This investigation uncovered a corrupt system of bribes and money laundering in relation to the illegal dumping of construction debris. Operation Silver Shovel eventually led to the conviction of 18 people, including many Chicago aldermen and inspectors. From the 1960s through the 1980s, incineration became the favored method for garbage disposal. When it went into service in 1971, the Northwest Incinerator was the largest in the world and handled 20 percent of Chicago's garbage. As the environmental impacts of incineration were more fully understood, contemporary Chicago again had to contend with its waste problems.

### **Illinois in the 21st Century**

In 2008, 45 active landfills in Illinois accepted more than 50 million cubic yards of municipal waste. Chicago has gained the dubious distinction of having more landfills per square mile than any other city in the world. By one estimate, every Chicagoan generates one ton of waste per year. In 2010, Illinois also had 481 Superfund sites as designated by the Environmental Protection Agency. The majority of these can be found in and around Chicago—a testament to the city's past struggles with waste disposal. Within the city, there is an unequal distribution of these landfills and Superfund sites. For example, a 1983 study of the Southeast Side of Chicago revealed cancer rates double those of the rest of the city. Not by coincidence, this area also has over 25 square miles of landfill, in addition to other environmental problems. The residents of this area

are predominantly poorer African Americans and immigrants. The environmental justice movement has called this unequal exposure of a particular social group to pollution, toxins, and other hazards "environmental racism." More than a century ago, Jane Addams noted that not all of Chicago's wards were treated equally when it came to trash removal. Her reform ethic has gained hold in 21st-century Chicago with early environmental justice groups such as People for Community Recovery and the Chicago Resource Center.

The Chicago Resource Center (CRC) was founded in 1975 by then University of Chicago philosophy student Ken Dunn. The CRC attempts to merge social and environmental causes. The center began with a program that paid the homeless to collect recyclables. In the 21st century, the CRC uses a multifaceted approach to help achieve social and environmental justice that includes turning vacant lots into community gardens, curbside recycling, managing a creative reuse warehouse, composting, and environmental education.

After many years of dragging its feet on a citywide recycling system, the Blue Bag Recycling Program was initiated in 1995 by Mayor Richard Daley. The concept was to have residents purchase blue plastic bags that could be filled with recyclables and tossed out with the rest of the trash. The blue bags would be collected along with the regular trash and were then to be sorted out at "recovery facilities." From the beginning, the system was plagued with problems. Many bags never made it to the sorting facilities, and those that did were often broken and unusable. The system was eventually somewhat improved by the replacement Blue Cart system. In 2010, however, a study commissioned by Chicago's Department of Environment found that only 8 percent of the waste from the 600,000 homes with city garbage service was recycled (in part because Blue Carts were distributed to fewer than half of households), and few of Chicago's many highrise buildings enjoyed recycling services. The city announced a new pilot program in 2011 to modestly expand the Blue Cart system, but at the beginning of 2012, most Chicagoans lacked recycling pickup services.

Christopher Sweet  
*Illinois Wesleyan University*

**See Also:** Crime and Garbage; Environmental Justice; Race and Garbage; Waste Management, Inc.

#### Further Readings

Biles, Roger. *Illinois: A History of the Land and Its People*. DeKalb: Northern Illinois University Press, 2005.

Grossman, James, ed., et al. *The Encyclopedia of Chicago*. Chicago: University of Chicago Press, 2004.

Pellow, David Naguib. *Garbage Wars: The Struggle for Environmental Justice in Chicago*. Cambridge, MA: MIT Press, 2002.

## Incinerator Construction Trends

An incinerator is an industrial unit used to treat waste by combusting it at high temperatures. In the 1980s and 1990s, incinerator construction slowed down because of concerns over air pollution. The use of incinerators was limited to existing structures and for the treatment and disposal of toxic and medical waste. In the 21st century, there has been renewed interest in new facilities, driven by the growing interest in using waste as an energy source, the emergence of such technologies, and new regulations regarding landfills. Nonetheless, critics continue to argue against the building of new incinerators, asserting that their usage does not give consumers any incentive to recycle, reuse, or reduce consumption, and that they are more polluting than coal power plants.

An incinerator is an industrial unit used to treat waste by combusting it at high temperatures. The largest incinerators handle and dispose of municipal waste, while smaller incinerators are used for specialized materials (such as toxic and medical waste). There has been an informal moratorium in many geographical locations on the building of new incinerators because of the potential harm to the environment. Nonetheless, incinerators continue to be built and used for hazardous and clinical waste because high temperatures are necessary to destroy pathogens and toxic contaminants. With the emergence of environmentally friendly incinerators, several municipal and regional governments are studying the possibility of resuming construction, since

they are an efficient method to dispose of waste in geographies where there is a high density of population or without suitable space for landfills.

#### Construction Considerations and Trends

Multiple considerations are taken into account when building an incinerator. One of the decisive factors is the local waste; the current and future quantity of waste generated is the prime consideration, but other factors, such as the composition of the waste, are also considered. The local political and public environment must also be carefully measured; legislation on emission controls and public perception both play an important role in choosing a locality for establishing a new facility. Other considerations include available infrastructures, locally available materials, and expertise.

Construction of new incinerators slowed (or, in the case of the United States, completely halted) from 1995 to 2006. The main reason for this moratorium was environmental concerns because of the pollution allegedly produced by these structures. Since 2006, there has been a renewed interest in the construction of such incinerators. This interest has been led by the growing use of waste as an energy source, the emergence of new technologies, and new regulations surrounding landfills.

One of the main reasons for renewed interest is that waste incineration has been granted qualification for renewable energy (RE) production tax credits in the United States, and it has obtained equivalent certification in Europe. Since many solid waste components contain hydrocarbons, their incineration generates steam and heat, which can be harnessed to generate electricity. Furthermore, the "renewable" nature of municipal waste has enabled it to qualify for renewable energy status. Hence, its designation as an RE has led to project expansions as well as feasibility evaluations for new plants. In addition, new projects devote extra attention to energy production in their proposal to evaluators and investors and take advantage of new waste-to-energy technologies in their design.

New technologies have also been developed to reduce greenhouse gas emissions and improve air pollution control. For example, a study compared the air quality in three communities with incinerators and three with no such structures. The research

**See Also:** Landfills, Modern; Massachusetts; Sanitation Engineering; Solid Waste Disposal Act; Waring, George.

#### Further Readings

- Arsova, Ljupka, Rob van Haaren, Nora Goldstein, Scott M. Kaufman, and Nickolas J. Themelis. "The State of Garbage in America: 16th Nationwide Survey of MSW Management in the U.S." *BioCycle*, v.49/12 (2008).
- Carmally, Atyiah. *Exploring Economic Incentives for Effective Solid Waste Management in Rhode Island*. Master's thesis. Brown University, 2004.
- Rhode Island Bureau of Audits. "Examination of the Rhode Island Resource Recovery Corporation: Summary of Findings." September 2009. <http://www.audits.ri.gov/Audit%20Reports%20for%20Web/2009/RI%20Resource%20Recovery%20Corporation%20Summary%20of%20Findings.pdf> (Accessed September 2010).
- Rhode Island Statewide Planning Program. "Rhode Island Comprehensive Solid Waste Management Plan 2007." <http://www.rirrc.org/about-us/program-and-planning-reports> (Accessed September 2010).

## Richard the Raker

Richard the Raker (d. 1326) was one of the earliest recorded garbage collectors in England. The term *raker* applied to employees of the city whose job it was to collect all manner of refuse from the London streets. In addition to *raker*, other terms for the predecessors of modern garbage collectors were *gong farmers* and *night soil men*. By most accounts, the duties of these three groups often overlapped. Gong farmers and night soil men were essentially medieval septic cleaners.

#### Latrine Cleaning

The earliest attempts at sewage control were latrines and cesspools. Depending on the financial means of a particular homeowner, a cesspool pit might be dug in the basement and a privy or garderobe constructed directly above. Outdoor latrines placed over a cesspool pit in the yard were also common. When a pit was full, a raker or gong farmer was contracted to remove the contents of

the pit. The term *night soil men* arose from the fact that, by city ordinances, cesspools were only to be cleaned during the night. Rakers, gong farmers, and night soil men all had to transport the fruits of their labors outside the city walls. If the waste was disposed of properly, it was taken to either a so-called laystall, which was a designated garbage dump, or sold to farmers to be used as fertilizer. More often than not, the easier method of disposing of waste was to either dump it in the Thames River or anywhere along the roads surrounding London. By the mid-14th century, each ward in London had at least one assigned raker. Rakers were supervised by beadles and under-beadles who served the role of city inspectors. The unsavory nature of the job actually resulted in salaries that were often better than other laborers, such as masons. This was especially true beginning in 1348 as the Black Death began to ravage the London population.

It should be remembered that the type of garbage removed from medieval London was markedly different from that found in any modern city in a developed country. A good deal of waste at the time derived from livestock kept in the city. In addition, lack of a central sewer system meant that gutters were often used as an open sewer. The gutter system was an ineffective method of removing human waste, particularly during times of drought. In 1349, King Edward III wrote to the mayor of London about the filth in the city, complaining: "the streets and lanes through which people had to pass were foul with human faeces and the air of the city poisoned to the great danger of men passing, especially in this time of infectious disease." The primary reason Richard the Raker is known to history is his unfortunate death. According to the London Coroners' Roll for 1326, Richard seated himself in a privy when the rotted boards gave way, depositing him in the cesspool below where he drowned in a dreadful manner.

Christopher Sweet  
*Illinois Wesleyan University*

**See Also:** Bubonic Plague; History of Consumption and Waste, Medieval World; Sewage; Street Scavenging and Trash Picking.