

A Comprehensive Assessment of Illegal Waste Dumping

By Elizabeth Hanfman

The focus of this paper is on illegal waste dumping both within the United States and internationally. It is estimated that there is currently approximately [98,995,672 tons](#) of illegally dumped waste world-wide. The dumping of waste in areas not regulated or designated for it can occur within and between countries. Regardless of where the dumping occurs it can have negative effects on the environment and on human health.

Illegal Waste Dumping in the United States

The United States produces more solid waste than any country. The EPA estimates that the average human has doubled how much garbage they produce per day since 1960 (Rea, 2005). Disposing of waste properly is not always affordable and convenient. It is common for people to dispose of waste in unpermitted areas to avoid disposal fees or the effort needed to properly dispose at landfills or recycling centers. Other reasons for illegally dumping waste are due to a lack of understanding of laws, the inadequacy of existing laws or the cost of fees for properly dumping the waste exceed those of potential fines. This is sometimes referred to as open, fly, wildcat or midnight dumping and there are numerous laws that prohibit this.

Illegal waste dumping generally occurs on vacant or private properties including abandoned industrial, commercial or [residential buildings](#). Other common places are wooded areas, along roadsides, in bushes, along rural roads and railway lines and in [alleys](#). It frequently occurs at [night](#) or in early morning, during warmer [months](#) and in poorly lit [areas](#). The illegal dumping of water also occurs when water exposed to industrial activity is released into the storm drainage [system](#).

[One source](#) says it occurs more in urban areas due to the inaccessibility of recycling or waste disposal centers and [another](#) says it occurs on the borders of cities and counties due to a lack of police presence. It can also be more [common](#) in areas with more renters who have fewer stakes in the community and in areas with absentee property owners. Also, in low-income areas it is less likely that there are pickup services and the residents are less likely to be able to afford pick up and disposal fees. People will sometimes claim to operate a transfer station or recycling center and accept waste for a fee. When the unpermitted facility is at [capacity](#), they will then abandon it. Some will also allow dumping on their own property for a fee which is [illegal](#).

[Materials](#) that are banned from landfills or lack a pick-up service such as yard waste, tires, appliances that contain Freon and car batteries are commonly dumped illegally. [Other items](#) include construction and demolition waste (drywall, roofing, shingles, lumber, bricks, concrete, siding, etc.), abandoned vehicles, auto parts and tires, appliances, furniture, yard waste, household trash, medical waste. Common offenders include people who work in construction, demolition, remodeling, roofing, landscaping, contractors, automobile repair or tire shop owners or employees, general hauling contractors, scrap collectors, do-it-yourselfers and local [residents](#). Construction and

demolition materials make up most of the waste found at illegal dump sites. This has affected the industry in that builders and contractors who cut their costs by disposing of waste illegally can underbid those who dispose of it legally which gives little incentive for those trying to do the right [thing](#).

The illegal dumping of waste effects the environment by contaminating the soil, surface waters and [groundwater](#). Dumped appliances can release hazardous chemicals including chlorofluorocarbons ([CFCs](#)) into the air which can harm the ozone layer. Chemicals from household, commercial and industrial sources can [contaminate](#) wells and surface water which can affect lakes, streams and drinking water [supplies](#). The waste can impact proper draining and make areas more susceptible to [flooding](#). The flooding impact can be more likely in areas with heavier rainfall due to the higher volume of [runoff](#).

The improper dumping of waste can threaten [wildlife and aquatic habitats](#). Birds and animals can die if they become tangled in or ingest waste and fish and other aquatic species can die from litter and food waste that decomposes in streams causing a depletion of oxygen in the water as well as the clogging of fish spawning areas.

Illegal waste dumping can affect human health in [multiple ways](#). When the sites are easily accessible to people they can be at risk of injury from nails and sharp edges. Children can possibly become trapped inside of appliances. There is the risk of being exposed to hazardous chemicals from toxic fluids or [dust](#). Appliances built before 1979 can leak polychlorinated biphenyls ([PCBs](#)) which are linked to cancer, reproductive failure and hormone imbalances in animals and humans.

Dump sites [attract](#) rodents, other animals and insects. Infectious diseases can be spread this way, especially through mosquitoes. [Tires](#), which are common items found at illegal waste sites, are ideal breeding grounds for mosquitoes since they can multiply 100 times faster than normal in the warm, stagnant water that collects inside of them. [Diseases](#) such as encephalitis, dengue fever and yellow fever have been spread by mosquitoes breeding in waste tires.

Fires are common at illegal dumping sites. They can occur from either spontaneous combustion or arson. This can be dangerous as the sites may have old aerosol or gas cans that can lead to explosions and household or farm chemicals can give off toxic [smoke](#). Burning at these sites can lead to forest fires, erosion and sediment loading can occur in [streams](#). This can also [cause](#) damage to and evacuation of surrounding neighborhoods.

It is very difficult to stop illegal dumping at a location after it has occurred. If the site is not effectively addressed, it can easily attract [more dumping](#). Also, after a landfill has closed it is common for people to continue dumping waste at the [site](#). Large scale dumping is generally a highly organized, commercial activity and it is not uncommon for other serious criminal activity to [co-occur](#) including breaking laws pertaining to the licensing of vehicles, insurance, drug possession and [theft](#). The dumping is more likely to occur in a neighborhood with high crime since offenders are less likely to be caught and prosecuted with other criminal activity taking [precedence](#).

Illegal dump sites can cause neighborhood property values to [decrease](#) and can affect the [local tax base](#). These areas can be [unattractive](#) to commercial and residential developers limiting their future potential. Millions of dollars are spent to clean up dump sites and the cost of hauling and disposing of this waste is passed on to residents with higher service fees or [property taxes](#).

International Illegal Dumping

Waste companies across Europe are trying to avoid paying [increasing](#) landfill and recycling charges. In 2004 an organization of waste inspectors from six European countries suggested that up to 20 percent of the thousands of containers of waste plastic and paper sent annually from Europe for recycling to China and Southeast Asia may be illegal. This is now considered to be an [underestimate](#) as new evidence from the Netherlands suggest that 70 percent of the European waste shipping through there to developing countries is illegal. Companies can [disguise](#) waste as recyclables simply by baling it together to make it look like paper and shipments of waste can also be disguised as donations. [Intermediate storage sites](#) are also often used to disguise the ultimate destination and the origin of the waste.

In [2005](#), more than 1,000 tons of household refuse disguised as waste paper on its way to be recycled in China was discovered in the Netherlands and sent back to where it had come from in Britain. Dutch environment ministry officials believe British waste is being dumped in poor countries via the port of Rotterdam which is the largest container port in Europe and that British waste companies use a complicated method of getting trash to the Netherlands which includes using multiple companies ports to deceive authorities. Five other containers were found with English trash that had made it over the border to Germany and turned up in [Indonesia](#). Countries in North West Europe commonly [ship waste](#) to non-European Union (EU) countries, especially in West Africa and Asia.

[Europol](#) identified an increase in the volume of illegal waste shipments across borders to be impacted by economic growth and globalization. It is one of the fastest growing areas of organized crime due to it being relatively low risk with a high potential for profit. In the EU, the illegal trafficking of waste is rising in countries in northwest and northeast Europe. Criminals use a variety of [illegal sites](#) including gravel and sand pits, abandoned industrial facilities and open-cast mines to traffick and dispose of waste. The illegal waste network in the EU is [organized and sophisticated](#) with a clear division of roles that include collection, transportation, recovery and legal expertise. Waste trafficking groups are usually [small](#) with between 5 to 10 people involved, commonly with ethnic links to the destination countries. [Europol's](#) 2011 Organised Crime Threat Assessment (OCTA) reported that illegal waste trafficking is often facilitated by legitimate businesses including financial services, import/export and metal recycling services.

The illegal trafficking and dumping of waste affects the environmental, human and financial health of a country. The [cost](#) for the clean-up of illegal dump sites is high,

especially if this involves multiple countries. For example, approximately 134,000 tons of waste was illegally dumped in a large gravel pit in North East Europe and the extraction and transport of this waste cost 160 Euros per ton which added up to over 21 million Euros. It is even more costly when the waste is considered to be hazardous. The cost rises to about 300 Euros per ton.

The transporting of electronic or e-waste from westernized to developing countries is common. Italy has become a [transit point](#) for e-waste that ultimately ends up in Africa and Asia. Over 50 million tons of e-waste is generated worldwide and it is commonly shipped to [China or India](#). In Europe, only 25 percent of digital waste is collected and recycled and the rest is put in containers and shipped to developing [countries](#). In a [Vanguard episode](#) called Pollution to Protest about e-waste, a reporter travels to Southern China where a lot of this ends up. In the video, the van driver was very anxious about anyone seeing the cameras due to the sensitive nature of the topic and the risk of being arrested or hurt. In the village of Guiyu, many people make a living by dismantling old electronic equipment. As they drove through there were endless piles on the side of the road with people working on them. The work is done at the people's homes, not in factories where there could be controls in place to protect workers from the toxic chemicals including lead, cadmium, mercury, etc. The reporter interviews university researchers who have studied the effects of the toxic chemical exposure on the local children who are exposed to it on a regular basis. One major finding was the high blood lead content of the children which can have an effect on the nervous system and lead to learning disabilities.

One of Canada's most respected photographers, Edward Burtynsky, gave a lecture called "[Manufactured Landscapes](#)" for TED (the non-profit organization Technology, Entertainment, Design) in which he focused on the work he has done in China. One of the main topics in his lecture is how fast China is growing. The building of the Three Gorges dam is evidence of this as it is the largest dam in the world by 50 percent. In order to build it, the Chinese had to relocate 13 cities. As they rebuilt the cities, they did not use progressive urban renewal knowledge; they did not include parks or green spaces and everything was built very close together or densely. The number of factories in China is also exploding and the desire for more resources is apparent. This is a major reason for accepting so much recyclable material and e-waste from other countries. Although the process of separating the usable metals by melting down the items is illegal due to the toxic fumes given off, people are still doing this at home. Based on the Vanguard episode, it is apparent that officials do not want to bring media attention to this issue due to the illegality however everyone is aware that the practice is in existence.

Another artist, [Pieter Hugo](#) photographed the people and landscape of a dump of obsolete technology in Ghana for his project named "Permanent Error." He was at an area on the outskirts of a slum called Agbogbloshie. Hugo asked the people what they call the pit where they burn the waste and they said, "For this place, we have no name." The people of Agbogbloshie burn the e-waste to extract copper and other metals. Pollution from this contaminates their soil, rivers and lagoons. In 2008, Green Peace took soil samples there

and found high concentrations of lead, mercury, thallium, hydrogen cyanide and PVC.

Combating Illegal Waste Dumping

The laws regarding illegal dumping vary from state to state. In [California](#), any trash thrown, discarded or dropped by a person onto public property or property not owned by the individual or into waterways is considered litter. The fine for littering can be up to \$1,000 and in some cases jail time may be given. [Connecticut](#) has a fine of \$219 for dumping anything bigger than one cubic foot. If you are caught dumping out of your vehicle it can be confiscated, you can be fined and arrest is possible. You can also be sued for clean-up costs at up to \$25,000 per day. [South Carolina](#) can prosecute illegal dumpers through the South Carolina Litter Control Act and the South Carolina Solid Waste Policy and Management Act of 1991. Convictions can include fines, having to clean up the site and jail sentences. The state's Department of Health and Environmental Control (DHEC) has criminal investigators that are assigned to investigate open dumping.

The EPA has identified [four programmatic areas](#) for preventing illegal dumping. The areas include cleanup efforts, community outreach and involvement, targeted enforcement, and tracking and evaluation. The cleanup efforts require resources and funding for not only cleaning up the site but also posting signs with information about fines and penalties as well as ways to report dumping. This can help discourage additional dumping and increase property values.

For community outreach and involvement, cleanup events can be organized that give communities the resources to properly dispose of illegally dumped materials. This can give them the opportunity to understand how some items need to be disposed of and it allows them to do this relatively easily. Another possibility in this programmatic area is to include dumping prevention in community policing programs to increase enforcement of illegal dumping laws without the additional costs of having separate resources. Also, communicating to the citizens that illegal dumping has heavy costs on local taxes can be effective. A hotline can also be helpful for citizens to report illegal dumping activities.

Targeted enforcement involves legal ordinances to regulate waste management and eliminate illegal dumping through fines, cost recovery penalties for clean-up and permit requirements for waste management activities. The fees collected from these ordinances could be used to fund illegal dumping prevention programs or could be used for rewards for reporting illegal dumping. The money can also be used for training and for hiring staff to conduct surveillance, do inspections and to write citations.

The last programmatic area is tracking and evaluation. This can be used to determine the effectiveness of prevention efforts. For tracking, mapping and computer databases can be used to identify areas where illegal dumping occurs the most and to determine patterns in the occurrence of dumping and keep track of the citations issued and to whom they are issued. This can help officials target the areas that are most in need of resources.

Local authorities should provide information regarding what waste services are available and how to use [them](#). In order to prevent illegal dumping signs should be posted at potential dumping areas so residents are aware that dumping is illegal and punishable by fines or prosecution, there should be adequate lighting and barriers (ex- fences, highway dividers, etc.) and the areas should be [landscaped](#). Possible sources of labor for cleaning and landscaping dump sites are through community and youth groups or [corporations](#). Enforcement can help to prevent or deter illegal waste dumping however the type of enforcement that is effective will depend on the scale of the [dumping](#). Laws surrounding illegal dumping should be easy for the public to understand and the fines associated with it should be more than the cost for [proper waste disposal](#). It is possible that requiring responsible parties to clean up the site rather than pay a fine could have a more profound effect on preventing future dumping (Rea, 2005).

It is difficult to determine the effectiveness of prevention activities however there are numerous initiatives and organizations throughout the country who are trying to make a difference. Spokane, Washington's Litter Control Program cleans up approximately 350 tons of waste dumped illegal on publicly owned properties [each year](#). Project HALT in Phoenix reported cleaning up 15,000 tons of waste in 1996 and 1997 and wrote over 165 [citations](#). The organization Southwest Detroit Environmental Visions sponsored the [Tire Roundup Program](#) where local residents were paid 25 cents for each illegally dumped tire they brought in. Over 8,000 tires were collected.

An organization in Philadelphia- [Keep Philadelphia Beautiful](#) - completed a survey on the extent of illegal dumping throughout the city. The study considered dump sites to have half a ton or more of debris. They were able to pinpoint most of the sites to be located in North Philadelphia and they found one of the biggest contributors to be small, private contractors who would dump waste from demolition and construction. In [EPA region 7](#), a grant was provided to the Missouri Department of Natural Resources for a Camera Assisted Remote Enforcement and Surveillance Project (MO CARES). The project placed surveillance cameras at illegal dump sites to prevent further dumping and monitor dumping that did occur.

Friends of the Trail, founded in 1996, removed more than 900 tons of garbage, 400 appliances, thousands of tires and more than 100 vehicles from public recreation areas, hiking trails and waterways in the state of Washington over an eight year period (Rea, 2005). The non-profit group, Living Lands and Waters recovered approximately 200 million pounds of trash in 2004 including kitchen appliances, tractors, vehicles, antifreeze bottles and mattresses (Rea, 2005). From 1993 to 2003, the Kentucky Division of Waste Management reported over \$51.8 million was spent to clean up more than 21,000 illegal dump sites in the state (Rea, 2005).

[Europol and other national experts](#) recommend using risk profiling to identify potential illegal disposal sites and to protect public officials from the hazards associated with the retrieval of illegal waste repositories. They also recommend a multi-agency approach when visiting suspected illegal waste sites which would include law enforcement and environmental inspectors. The Environment Agency of the United Kingdom set up an

Illegal Waste Site Task Force to actively target people who profit from the illegal waste business and damage the [environment](#). The fines associated with illegal waste dumping vary by country. One example is [New Brunswick](#) in Canada where fines range from \$1,000 to \$1 million for a company that illegally dumps and \$500 to \$25,000 for individuals.

“[Let's do it 2008](#)” was a campaign that began in Estonia that was led by one of the inventors of Skype- Ahti Heinla and the founder of Microlink and Delfi- Rainer Nolvak. People used cell phones and GPS to map and take images of illegal dumps around the country. Ultimately, they mapped more than 3,000 sites. On Saturday, May 3rd, 2008, 50,000 people, or 3.8 percent of the total population in Estonia worked together to clean it up. The mission of the project was to shift the mindset of the people to become more environmentally conscious. This movement inspired a website where people can map illegal dumping sites around the world.

The mission of [Keep Pennsylvania Beautiful](#) is to empower Pennsylvanians to make their communities clean and beautiful. Their website says “trash attracts trash” and when a community is kept clean, it stays clean. If an area is littered, it sends the message that it is acceptable to continue littering there. The organization’s website includes a variety of educational resources including books and pamphlets to increase awareness, cigarette littering prevention, graffiti prevention and yellow pages opt out.

The organization’s Illegal Dump Survey Program has surveyed 61 counties since it began in 2005 and has identified 6,244 illegal dump sites which contain an estimated 18,022 tons of trash. The final reports for each county are posted there. The surveys help to educate state, county and local officials and citizens about the problem. The purpose of the surveys is to assess and document as many illegal dumpsites as possible which can be used for planning the solid waste and recycling services needed.

Two quotes from photographer [Edward Burtinsky](#) seem appropriate to conclude this paper on illegal waste. One- “recycling yards, mine tailings, quarries and refineries are all places that are outside of our normal experience, yet we partake of their output on a daily basis” highlights how the majority of people do not think about what they consume, where it goes once they are done with it and the potential impact their actions have on the environment. The second “I think the environmental movement has failed in that it’s used the stick too much; it’s used the apocalyptic tone too much; it hasn’t sold the positive aspects of being environmentally concerned and trying to pull us out” sums up how the environmental movement is portrayed in society. Instead of sending messages that continuing to consume and pollute will lead to impending disaster there should be more focus on how much more pleasant it could be to live in a healthy and clean environment.

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