



## 2008 National Postconsumer Recycled Plastic Bag and Film Report

### Introduction

The 2008 National Postconsumer Recycled Plastic Bag and Film Report is the fourth annual U.S. report on pounds of plastic bags and film recovered for recycling.<sup>1</sup> Research for this report was conducted by Moore Recycling Associates Inc. of Sonoma, CA for the Plastics Division of the American Chemistry Council (ACC) of Arlington, VA.

### Executive Summary

Film recovery has increased by 28 percent since 2005. Recovery grew to an estimated 832,394,000 pounds of postconsumer film (including plastic bags) in 2008. Thus, the upward trend of plastic film recovery continued in 2008 despite a dramatic drop in scrap prices and export activity towards the end of the year.

In order to determine an accurate estimate of pounds of film recovered in 2008, both the domestic and export postconsumer film markets were surveyed. The information obtained is based on recovery data from 19 domestic processors or end-users of film material and 60 companies that export material.

The domestic composite lumber industry remained a significant force in the market for scrap plastic film, but a growing portion left the country in 2008. The export market consumed nearly twice as much as the composite lumber industry in 2008.

Similar to other recycled materials, scrap prices were highly unstable in 2008 with a peak in the summer of 2008 and a hard crash in October 2008. For most of the year, exporters frequently outbid domestic buyers resulting in less material purchased by domestic processors. Many domestic buyers likely used existing inventory and bought conservatively as manufacturing slowed and economic indicators worsened. Current demand and pricing, although not back to record levels, is strong and steady.

With the shift in material toward the export rather than domestic market and the challenge of collecting survey data from export buyers, the total reported collection for 2008 is likely conservative. This is especially true since the number of collection programs continued to grow in 2008, with an increased number of retailers offering plastic bag recycling to consumers and businesses establishing internal recovery programs for stretch wrap and other bags, sacks, and wraps. But, while the number of collection programs grew, there may have been a decline in the use, and therefore recovery, of transport packaging (e.g., pallet wrap), as economic conditions worsened and manufacturing slowed. Distribution centers began consolidating in late 2008 as companies strived to maintain leaner inventories. Thus the modest increase in the total

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<sup>1</sup> Generally in this report plastic bags and film will be referred to as "film".



scrap film recovered in 2008, while conservative, is believed to be representative of 2008 totals considering the economic slowdown combined with the growing trend towards material flowing out of the country rather than to domestic processors.

## Findings

In 2008, an estimated 832,394,000 pounds of postconsumer film was collected for recycling. The breakdown between the amounts consumed domestically and exported are as follows:

### Postconsumer Recovered Film Year Total Exported Consumed in US or Canada

Year	Total	Exported	Consumed in US or Canada
2008	832,394,000	469,968,000	362,426,000
2007	830,180,000	462,611,000	367,569,000
2006	812,010,000	221,082,000	590,928,000
2005	652,477,000	183,701,000	468,776,000

Until the market crash in October of 2008, there was an unprecedented number of small and medium sized processors handling film in China. Without liquidity and inability to obtain loans, many small businesses ceased operations after the market crash.

More exporters were included in the survey in 2008 (25% increase) compared to 2007.<sup>2</sup> Some of the previously surveyed exporters reported increases and others reported purchasing less material in 2008 than they did in 2007. Willingness to report certain grades of material may have been impacted by restrictions on the import of certain postconsumer materials into China. For example, some exporters reported only buying post-industrial grade material.

There were several new domestic buyers in 2008 compared to 2007, but a number of domestic buyers did not report in 2008 that had reported in 2007. Domestic purchasing of postconsumer film fell in 2008 for all grades except “mixed film,” which includes the grocery bags collected through retail programs. Export purchasing increased for all grades except “mixed film.”

While difficult to estimate, capacity to process very clean film in the United States is likely around 800 million pounds. Utilization—even more challenging to estimate—is likely around 50%. Total domestic processing capacity for postconsumer film plastic is

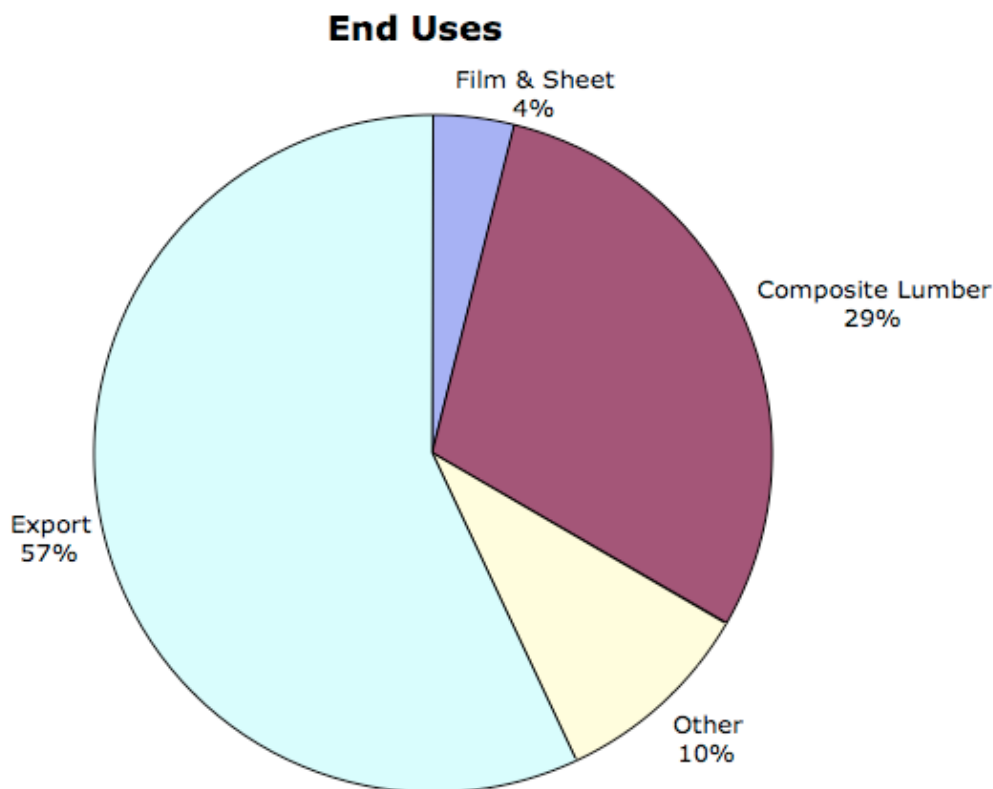
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<sup>2</sup> Moore Recycling Associates discovered more exporters and also became more effective in getting exporters to respond to the survey.

difficult to estimate because of the variability in quality and in processors' ability to handle the various grades. Capacity to handle material contaminated with dirt and other impurities is very limited in the United States. Yet, there is likely a much larger capacity to handle very clean film than was captured through the survey of postconsumer film buyers because the survey does not capture post-industrial scrap plastic recovery. While the total recovery reported does not include post-industrial material, the survey instrument does ask about the amount of post-industrial film plastic purchased, but the survey does not capture the large number of companies that do not handle any postconsumer and only purchase and process post-industrial film.

### End Use Markets

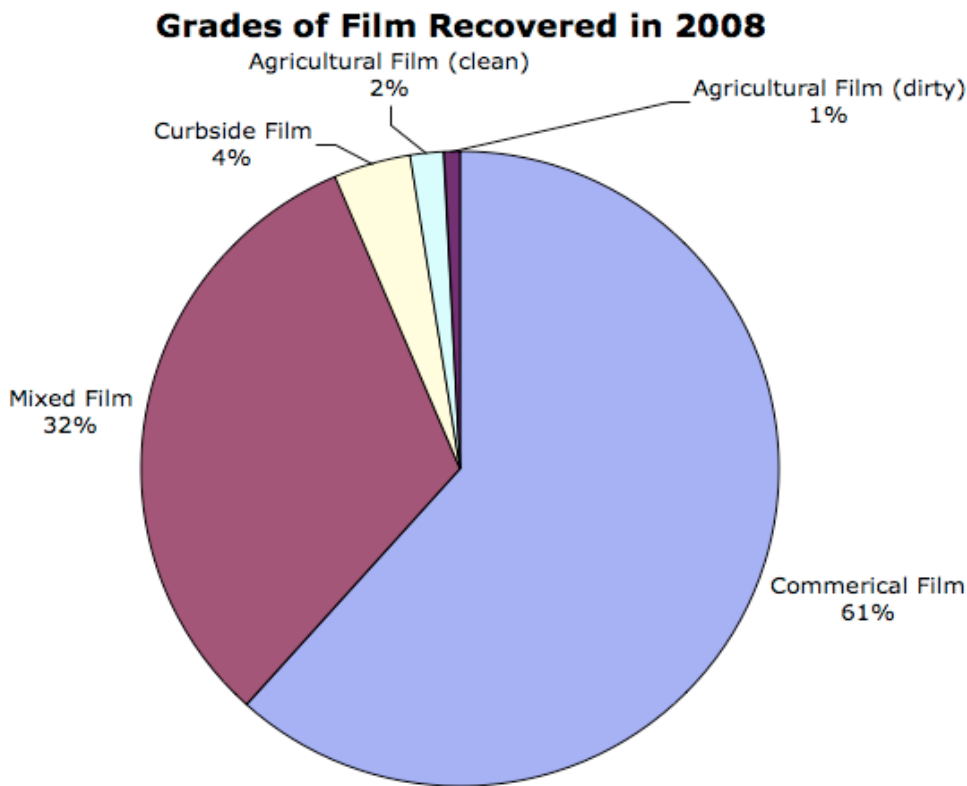
As previously noted, composite lumber applications were the primary use by the domestic end markets (29 percent of the total collected in 2008). The export market purchased the largest share of U.S. recycled film (57 percent), while the domestic film and sheet markets utilized a growing amount (4 percent compared to 3 percent last year). Nearly 10 percent went into "Other" miscellaneous applications, such as rigid packaging, buoys, artificial mulch, piping, pallets, or bins. Some of the material in the "Other" category also may have gone into film, sheet, or composite decking. Not all processors were able to report where their postconsumer resin ended up.<sup>3</sup>



<sup>3</sup> To protect the confidentiality of respondents, only end uses in which there are more than 3 companies are listed.

## Grades of Recovered Film

Recovered film enters the market in various grades, noted below, and typically includes a combination of baled HDPE, LDPE, and LLDPE resins. Stretch film, collected as commercial film and as a part of mixed film, represents a significant majority of postconsumer recovered film while agricultural film represents a small amount at approximately 3 percent. Plastic grocery and retail bags make up approximately 17 percent of the total postconsumer film recovered in 2008. Plastic bags often are commingled with stretch film wrap for efficient collection at retail locations. Processors estimate bags make up 40 percent of the commingled bales purchased from retail programs. Curbside film is composed primarily of plastic bags.



**Commercial Film** = Clear, clean PE film including stretch wrap and poly bags

**Mixed Film** = Mixed color, clean PE film including grocery bags

**Curbside Film** = Mixed PE film generated at MRFs

**Ag Film** = PE film from over wintering & greenhouse film

The following chart on [www.PlasticBagRecycling.org](http://www.PlasticBagRecycling.org) provides examples of the types of plastic bags and wraps that can be recycled with grocery bags at participating stores:



Please recycle only clean, dry plastic bags and film. Remove receipts or any other items from bags.

- newspaper bags
- dry cleaning bags
- bread bags
- produce bags
- toilet paper, napkin, and paper towel wraps
- furniture wrap
- electronic wrap
- plastic retail bags (hard plastic and string handles removed)
- grocery bag
- zip lock bags (remove hard components)
- plastic cereal box liners (if it tears like paper do not include)
- Tyvek (no glue, labels, other material)
- diaper wrap (packaging)
- plastic shipping envelopes (no bubble wrap/remove labels)
- case wrap (e.g., snacks, water bottles)
- All clean, dry bags labeled #2 or #4.



Look for clearly marked bins at participating grocery and retail stores



**Do NOT include the following.**

The following are considered contaminants and could jeopardize recycling programs:

- NO** food or cling wrap
- NO** prepackaged food bags including frozen food bags (e.g., prewashed salad bags)
- NO** film that has been painted or has excessive glue
- NO** other bags or films
- NO** bio-based or compostable plastic bags

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## **Film Marketplace**

Following a steady market in 2007, 2008 turned out to be a particularly volatile year for scrap plastic pricing<sup>4</sup>. The value for scrap plastic peaked toward the end of the summer and then crashed suddenly in October 2008. In the last quarter, scrap value dropped by two thirds.

Prior to the crash, quality had declined for most scrap material, particularly film plastic. The export market was accepting nearly everything. Domestic markets had moved away from lower grade material in 2008 and were focused on mixed film and commercial film if they could get it for a reasonable price.

After the crash, scrap prices for mixed film recovered more slowly than commercial film. Even when material flow out of the country slowed after the crash, demand for commercial film remained strong, especially from the export market.

The close of 2008, set the stage for some changes in the scrap plastic market: many brokers or third party handlers exited the marketplace as margins narrowed, some suppliers began to focus on quality in order to maintain market options with domestic buyers, and many manufacturers found ways to utilize their own scrap rather than selling into the marketplace.

Despite restrictions from China on the import of unprocessed postconsumer material, the amount of scrap material imported to China grew.

## **Curbside Film**

There was an increase in the amount of curbside film sold into the market 2008 over 2007. At least 90% of curbside film was sold to the export market, which welcomed such material until October of 2008.

## **Retail Plastic Bags and Film**

Retail stores with plastic bag collection programs are located in every U.S. state. More consumers are becoming aware of the option to recycle plastic bags but also other items such as newspaper and dry cleaning bags, and plastic film wrap (e.g., the wrap around paper towels and dry goods). The chart on page 5 shows examples of types of bags, film wraps and film that can be recycled. For case studies of model recycling programs, go to [www.plasticbagrecycling.org](http://www.plasticbagrecycling.org).

## **Additional Information**

This is the fourth year Moore Recycling Associates Inc. has conducted this survey and produced this report for the Plastics Division of the American Chemistry Council.

The Plastics Division of the American Chemistry Council provides resources to communities, businesses and consumers to assist them in increasing awareness and

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<sup>4</sup> Pricing was volatile for many grades of scrap including plastic, paper and metals.

education of the recycling of plastic bags and film. Information can be found on the national online web resource [www.PlasticBagRecycling.org](http://www.PlasticBagRecycling.org).

The 2008 National Postconsumer Plastic Bag and Film Report has been prepared to provide information to parties interested in the recycling of plastics, in particular film and bag materials. Facilities developing a recycling process and all entities involved in the chain of collection, processing, distribution, and sale of recycled products have an independent obligation to ascertain that their plans, actions, and practices meet all relevant laws and represent sound business practices for their particular operations. Facilities may vary their approach with respect to particular operations, products, or locations based on specific factual circumstances, the practicality and effectiveness of particular actions and economic and technological feasibilities.

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