



KEEP THE ISLAND CLEAN!
Put litter in its place.



Roadside Litter Survey Report - 2005



*Southeast
Environmental
Association*



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Introduction

This study was commissioned by the Provincial Department of Environment, Energy and Forestry and is designed to look specifically at the issue of roadside litter in Prince Edward Island. The department is working with a multi-stakeholder committee to address the issue of littering through regulation and/or education and awareness. This is the fourth year for the survey. This is the first survey that is branded. Rather than just identifying product types, such as cups, it also lists the company that distributed the product to the consumer.

The 2005 survey also saw two additional sites added within the downtown core of the City of Charlottetown. These sites were added to get a better picture of roadside litter in the heart of the largest city on PEI. One site was dropped from the survey since it was completely cleaned by a provincial road crew prior to being surveyed. The site could not be moved according to the survey criteria. This left a total of 46 sites that were surveyed.

The information collected in the annual roadside litter survey is used in determining an effective anti-litter campaign for PEI. The PEI Litter Awareness Committee is comprised of the following organizations:

- ✓ Island Waste Management Commission
- ✓ PEI Liquor Control Commission
- ✓ Tourism PEI
- ✓ Tourism Industry Association of Prince Edward Island
- ✓ Southeast Environmental Association
- ✓ City of Charlottetown
- ✓ PEI Department of Environment, Energy and Forestry
- ✓ Prince Edward Island Fluid Milk Processors
- ✓ Construction Association of PEI
- ✓ Federated Women's Institute of Prince Edward Island
- ✓ Federation of Prince Edward Island Municipalities
- ✓ PEI Department of Transportation and Public Works

SEA would like to recognize the support of the PEI Department of Environment, Energy and Forestry without whom this survey would not be possible. We would also like to thank and acknowledge the hard work of our staff – Trent Rattray, Karen Wilson, Barry Judson and Liz Carr – who collected the data (garbage). Thanks to David Boyce for the data analysis and reporting.

Survey Methodology

Overview

The methodology used for this survey is a cross section of other surveys completed. The methodology utilizes the standard definitions and procedures that have been used over the last three years of the survey.

A survey of litter along PEI roadsides was conducted in July 1990. It used roads totalling a length of 515 kilometres as a representative sample for the province. Along these highways, a total of 138 sites of 500 metres each were sampled. It is unclear from the methodology how these sites were determined and why a total of 138 sites were sampled. Since major highways were used in the previous work, they have also formed a part of this survey.

Litter Definition

This survey focussed on visible litter which is defined as:

“Litter is an article of human made or human transported solid waste that has been deposited or disposed of in an improper place. This excludes natural flora and fauna, dog and cat litter, agricultural products and tree bark. Articles below bottle cap size (1 inch diameter) such as cigarette butts are excluded. All fragments of a broken glass container, mirror or similar brittle object are counted as one item.” (Ontario Litter, 1990, p. 29)

Three sites, representing a different county and a different setting (rural/urban), were randomly selected in the initial survey year to include cigarette butts in the data recorded. No other litter smaller than one-inch diameter will be included at these sites.

Site Length and Width

Each survey site was 100 metres in length with both sides of the road surveyed accounting for 200 metres of linear area surveyed. The width of sites surveyed was determined by the characteristics present at the survey site. The measurement of the width was calculated from the edge of the pavement and extends to the presence of a litter catch point. These features include fences, tall grass or a hedgerow. The maximum site width for a site was 10 metres.

Site Selection

Sites were originally selected at random but were also representative of primary, secondary and clay roads across the urban and rural setting. This year's survey was a repeat of the original 45 sites selected in 2002, with two more sites added in Charlottetown. A total number of 47 sites was determined as desirable with approximately one third from each of the urban, suburban and rural areas. This was also divided to allow for an equitable number of sites between each of the counties.

Site Alteration Criteria

Once a site was selected, it was not rejected due to a lack or excess of litter. If a site contained less desirable criteria, it was moved 500 metres to the northwest to avoid the obstruction. The less desirable criteria included:

- Bridge - as part of survey site or the majority of the roadside is submerged.
- Construction - a site where the presence of construction and/or demolition debris is obvious due to construction activity.
- Security and safety - addresses concern for the safety of the survey crew. This includes dangerous bank conditions, blind road corners, or a site containing material deemed to be hazardous.
- Waste management facility - proximity to a facility for the handling of waste, compost or recyclables.
- Women's Institute cleanup - survey site has obviously been cleaned up as part of the program. Bags are lined up along the roadside.

For the 2005 survey, one site was dropped since it was completely cleaned by a provincial road crew prior to being surveyed. That left a total of 46 sites.

Enforcement Action

Sites containing hazardous materials or what could be deemed to be illegal dumping were to be reported immediately to the PEI Department of Environment, Energy and Forestry via their toll free number (1-800-565-1633). Staff were to take photos of the incident area if conditions were suitable so as not to pose a risk to safety. No incidents were encountered in the 2005 survey.

Sampling Time Frame

Springtime was selected as the sampling time frame to allow for the maximum amount of waste to be found. The sampling was completed after the snow left the roadside and in advance of the annual Women's Institute roadside cleanup to ensure, to the best of our abilities, that the results were not impacted.

Quality Control

Surveyors were trained to conduct the survey through hands-on training. This took place at three survey sites under full supervision. Results were reviewed and compiled on a daily basis. At least five digital photographs were taken at each site to record the quantity and type of litter representative of the site. It was also used to help qualify unknown types of litter for data recording purposes.

Surveys were conducted in teams of at least two with one collecting waste and the other marking the survey sheets. Data recorders remained constant from the beginning of the survey to the end to ensure consistency in recording. All litter collected at each site was bagged for appropriate disposal at a local waste management facility in the part of the province where it was collected.

Reporting Methodology

The final report will contain the following elements:

- Methodology - An overview of the methods used to collect the data and determine the survey sites will be presented.
- Results - Presentation of the results amalgamated collectively for all sites. Results will be presented in graphs as general categories of product types collected. Analysis of the data will also be broken out by region and by the demographics of the sites. Limited interpretation of the results will be offered including any confounding issues that may have served to alter the results from the normally anticipated circumstances.
- Appendices - A sample of the data survey sheets and a compendium of the information collected per site will be attached. The information presented per site will include a location description of the survey site and any influencing factors that may account for the observed results.

Discussion / Results

The time frame of spring was selected to allow for the least alteration in content of roadside litter. All of the waste discarded from the fall and winter would still be present while able to be found among the grass and shrubs in the ditch. The timing of the survey was critical with potential late snow falls covering the work area and getting at the material in advance of the annual Women's Institute roadside cleanup. It was also noted that bottle collectors had already begun to take material out of the ditches for several weeks as the snow retreated.

All survey results are for numbers of items collected and not the total volume. All percentages presented have been rounded to the nearest whole number. Zero may not mean that no waste was found but it is an average of less than 0.5 for that item.

Within the survey, there were 32 specific categories and five general categories to classify waste items collected. With the exception of waste that did not fit into a particular category, the products found most often during the survey were food containers associated with take out service. This makes sense given that these are the waste products most commonly associated with automotive traffic.

The branded survey yielded a clearer picture of the composition of roadside litter. These results cannot be compared to the historical data since brands did not form a part of those surveys. For year to year comparison, the broad waste categories were used, allowing the tracking of trends in waste discarded at roadside with data from the previous three years.

The total amount of waste collected at the survey sites in 2005 decreased slightly from 2004 with an average of 160.76 items collected per site in 2004 and 151.14 collected in 2005 (see Appendix 'B'). Over the four years that the survey has been conducted, the amount of waste found at roadside has remained relatively stable and somewhat consistent in its makeup.

General paper and plastic waste continue to be the most common items collected. Cups and lids account for a total of 17% of roadside litter, although the average units per site declined from 2004. Cigarette packages are the next most common item in the survey, accounting for 7% of litter. There has been a steady increase in cigarette package litter with the average units per site going from 4.58 in 2002 to 10.96 in 2005.

In general, the rural sites contained less waste per site compared to the urban sites. The notable exceptions were site 7 (Hazelbrook) and site 31 (Brookfield). Site 7 has a C&D disposal site nearby and the survey showed that it did have more C&D debris than the average. It also had above average amounts collected in almost every category. Food containers such as cups and paper packaging were over three times the average collected per site. Site 31 is near the provincial composting facility. The litter collected at the site across almost all categories exceeds the average found per site. Cups, paper food packaging, general paper and general plastic waste were found in quantities two to four times the average per site.

Three of the 46 sites were also examined for cigarette butts. The results for each site were 529, 911 and 372 butts collected at each. This item was smaller than the products outlined for collection in the survey criteria, but it was felt that it was important to have a handle on this component of litter. While the volume is not very significant, the numbers far exceed other products collected in the survey area (see Figure 4, page 14).

Compared to other areas in North America, the volume of roadside litter in PEI appears to be less. This is most likely attributable to the roadside cleanup implemented each spring by the Women's Institute and the growing Adopt-A-Highway program that has a spring and fall cleanup. In addition, the PEI Department of Transportation and Public Works has staff cleaning the ditches along major arterial highways throughout the province each spring.

In PEI, the main highway and secondary paved roads total 3,724 kilometres in length. The gravel and clay roads total 871 kilometres¹. This is a total length of 4,595 kilometres of roads on PEI. If the average of 151.14 litter items per site measured in the 2005 survey is applied to the total kilometres of roads in the province, the total could be calculated to be close to 7 million pieces of litter (not including cigarette butts) to be found along PEI roadsides. This represents 1,522 items per kilometre. This compares with the "Don't Mess with Texas"² campaign which estimates that along Interstate Highways there are 2,500 items per mile (4,000 items per kilometre) and on Farm-to-Market roads 900 items per mile (1,440 items per kilometre).

¹ <http://www.peitourism.com/info/>

² http://www.dontmesswithtexas.org/education_detail.php?report_id=4

Waste Sorting Categories

All waste was sorted into one of 32 different categories. The categories can be further sorted into five general product types. A list of the categories and *some examples* of each are listed below.

General Type	Category	Examples
Food Container	Cups	includes paper, plastic and Styrofoam cups
	Lids	lids for cups
	Straws	
	Paper Food Package	typically a sandwich wrap
	Plastic Food Package	same as above
	Foil Food Package	typically burger wrappings
	Styrofoam Food Package	take out food platters, wrappings
	Sauce Package	small plastic and foil packs for ketchup and sauces
	Napkin	
	Cutlery	plastic knives, forks and spoons
Beverages	Can	soda (pop), juice or other beverage
	Plastic Bottle	water, pop, liquor, electrolyte drinks
	Glass Bottle	pop, liquor, juice (includes those found broken)
	Carton	typically milk products waxed carton
Confectionary	Chocolate	any candy bar wrapper
	Gum	any parts of the packaging for gum
	Chip Bag	
	Candy Wrap	all other forms of candy wrappings
Containers	Cigarette Pack	
	Tetra Pac	small drinking juice boxes
	Other Beverages	any other not covered under another category
	Plastic Bag	typically shopping bags

Uncategorized	Cardboard	
	Paper	this may include the bag from take out service
	Plastic	
	Glass	
	Styrofoam	
	Cloth	textiles
	Metal	
	C&D Debris	construction and demolition debris
	Car Parts	tires, mufflers
	Garbage Bags	filled garbage bags

Figure 1. Overview of waste found Island-wide by general product category.

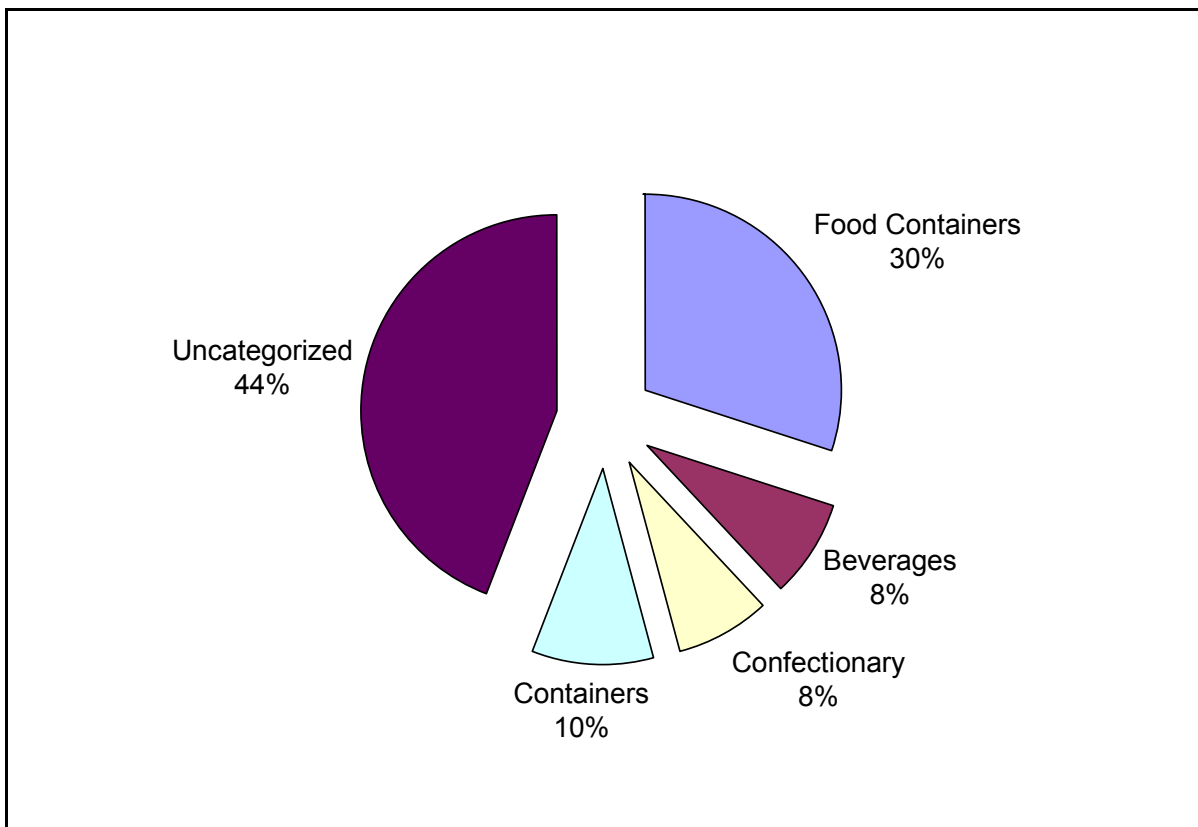


Figure 2. Overview of waste found Island-wide by product type

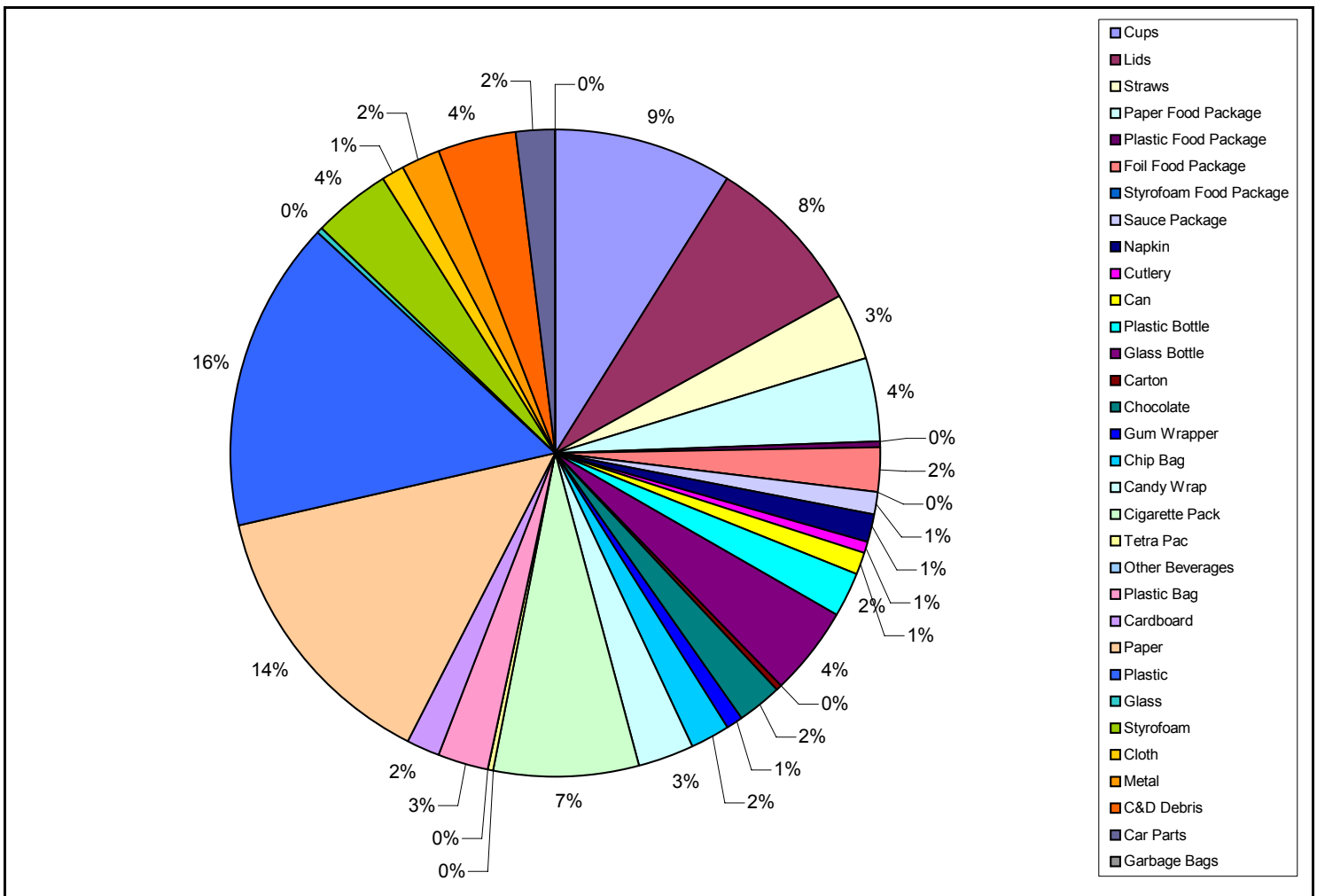


Figure 3. Significant product types of waste found Island-wide.

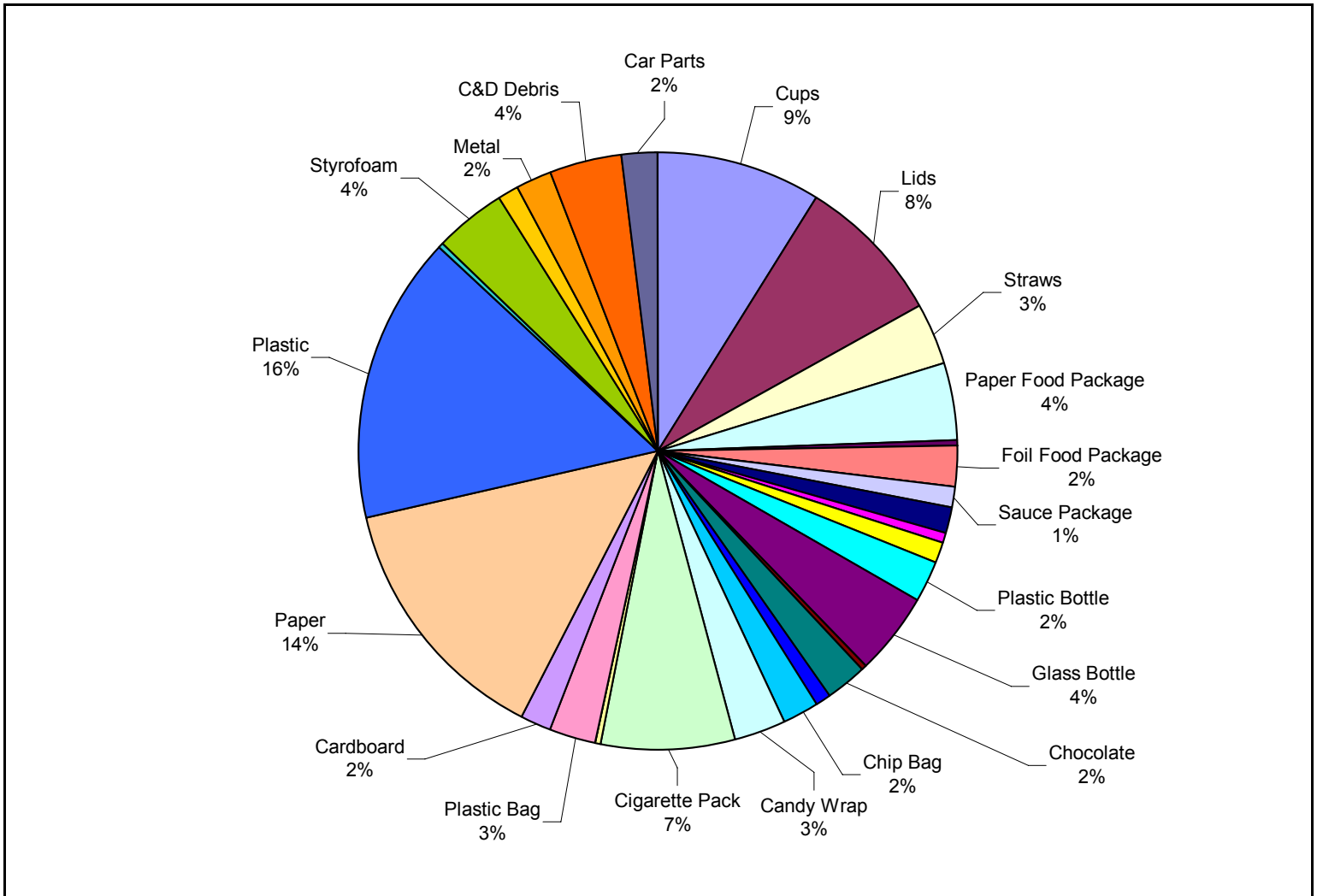
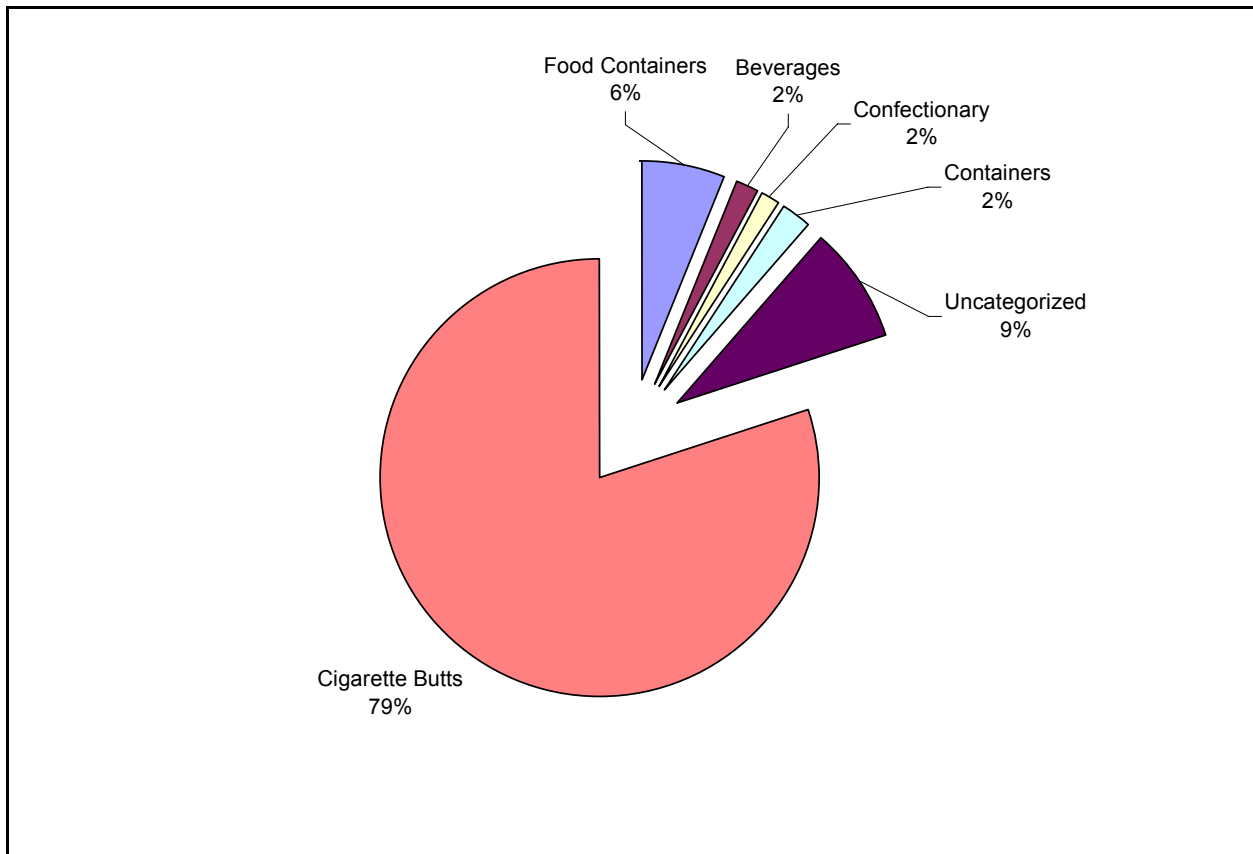


Figure 4. General waste categories for three selected sites including cigarette butts.



Cigarette Butts

Three of the 46 sites were examined for cigarette butts. This item was smaller than the products outlined for collection in the survey criteria, but it was felt that it was important to have data on this component of litter. The graph above (Figure 4) shows the results. While the volume is not very significant, the numbers far exceed other products collected for each survey area.

The results for each site were 529, 911 and 372 butts collected. This represents a slight decrease in numbers collected in the previous year. The results for each site over the past four years can be found on the following page (Figure 5). Overall, cigarette butts as a percentage of roadside litter have increased from 67% in 2004 (73% in 2002 and 71% in 2003) to 79% in 2005. This is due to the overall reduction in the amount of litter from other categories collected at roadside at the three selected sites.

Figure 5. Comparison of quantities of cigarette butts collected at three selected sites.

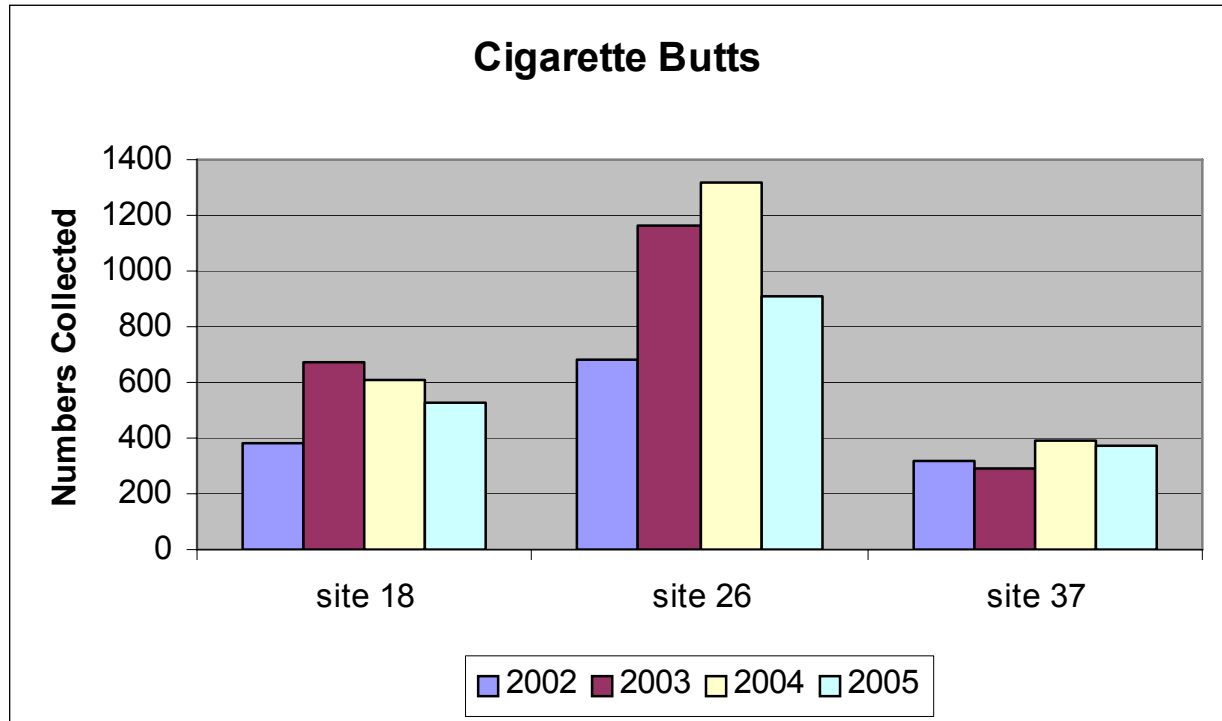
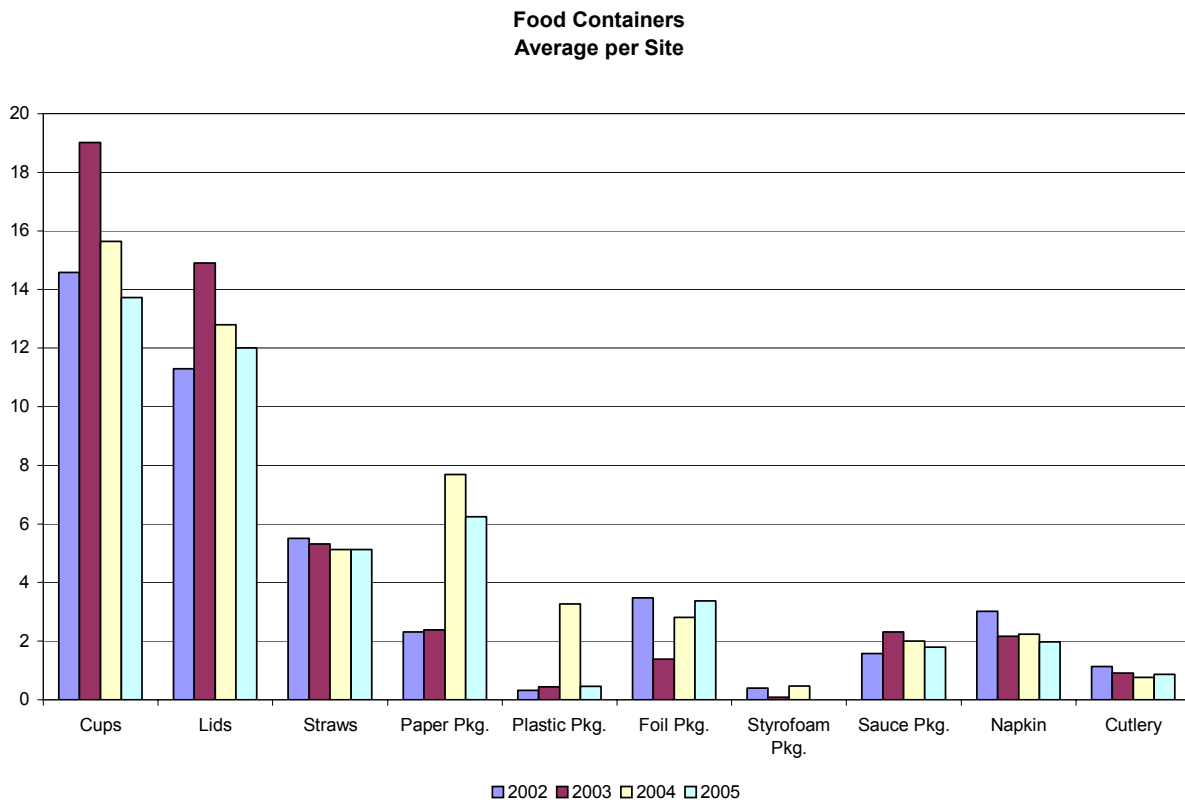


Figure 6. Comparison of 2002, 2003, 2004 and 2005 food container categories.

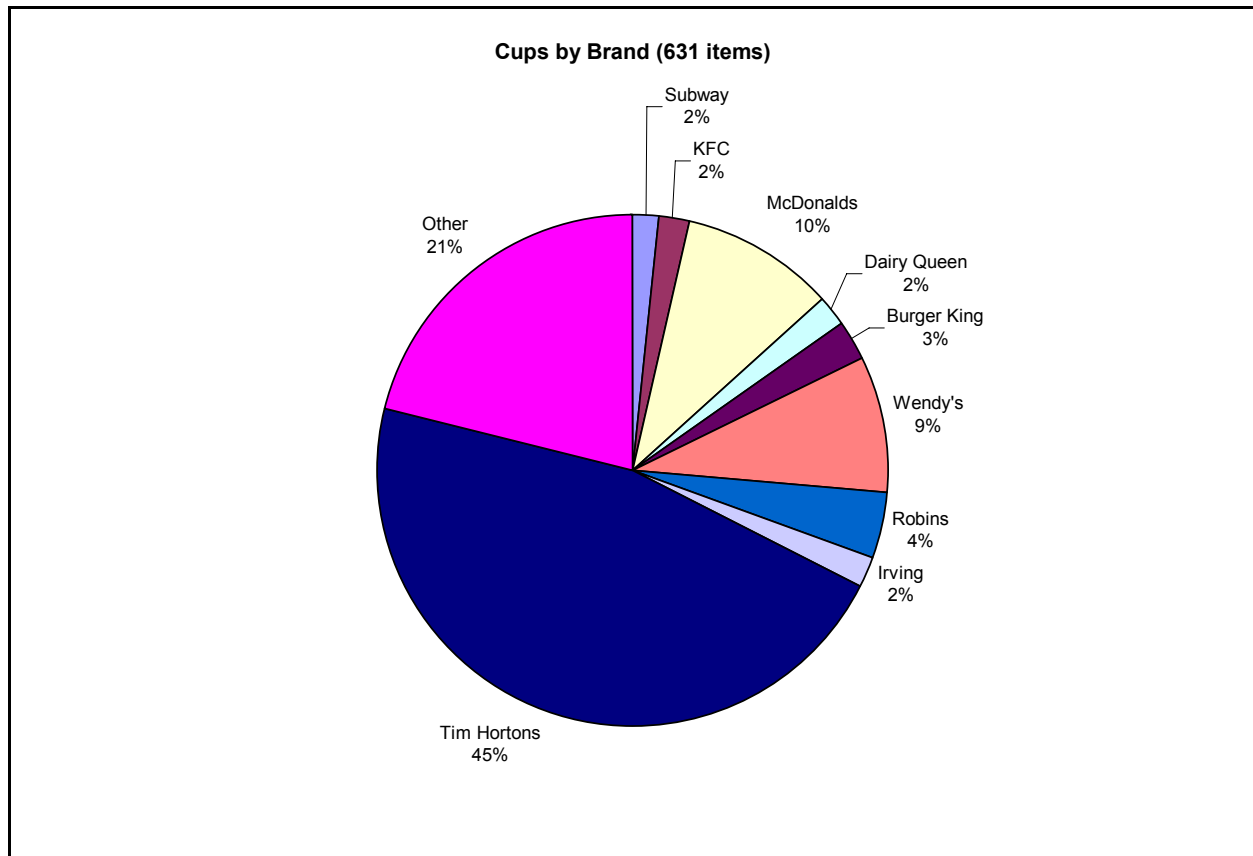


Food Containers

Food containers represented 30% of the waste collected. This is down slightly from 2004 where it represented 33%. This is also reflected in the annual comparison (see Figure 6) where most of the categories showed a decrease.

The category is mostly represented by packaging in which food is served by take out facilities. Cups, and the items most closely associated with cups (lids and straws), are the most common items found. The next largest category is paper packaging which includes items such as french fry containers and sandwich wrappers. Foil packaging, usually from sandwich wrappers, is the third most common category.

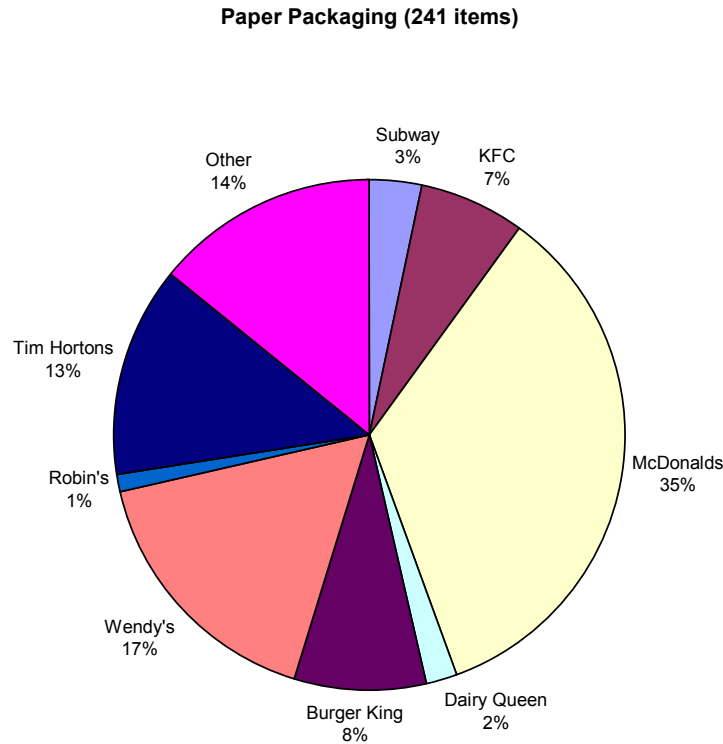
Figure 7. Distribution by brand name of cups collected.



Cups

Paper, plastic and styrofoam cups comprise 9% of roadside litter (Figure 3, page 13) with 631 cups collected at the 46 survey sites. Tim Hortons cups represented 45% of this category and 4% of overall roadside litter (not including cigarette butts). Generic cups comprised the next largest group at 21%. These include coffee, soft drink and milkshake containers with no brand name.

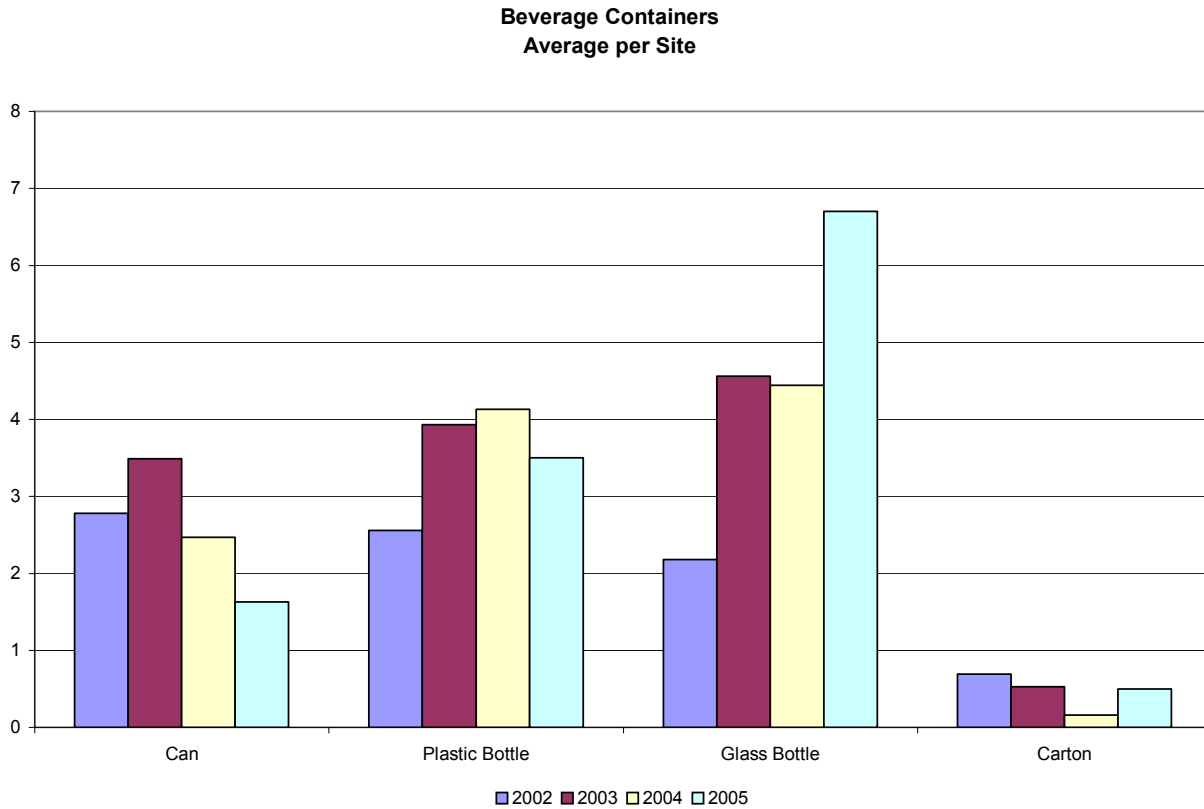
Figure 8. Distribution by brand name of paper packaging.



Paper Packaging

Paper packaging for food containers, with 241 items, formed 4% of the litter collected. There was an average of over six items collected per site. Paper food packaging was the second most common food container item collected after cups (including cups, lids and straws). The category includes items such as sandwich and burger wrappers, lunch bags and french fry cartons. The most common brand collected was McDonald's which comprised 35% of the paper packaging collected.

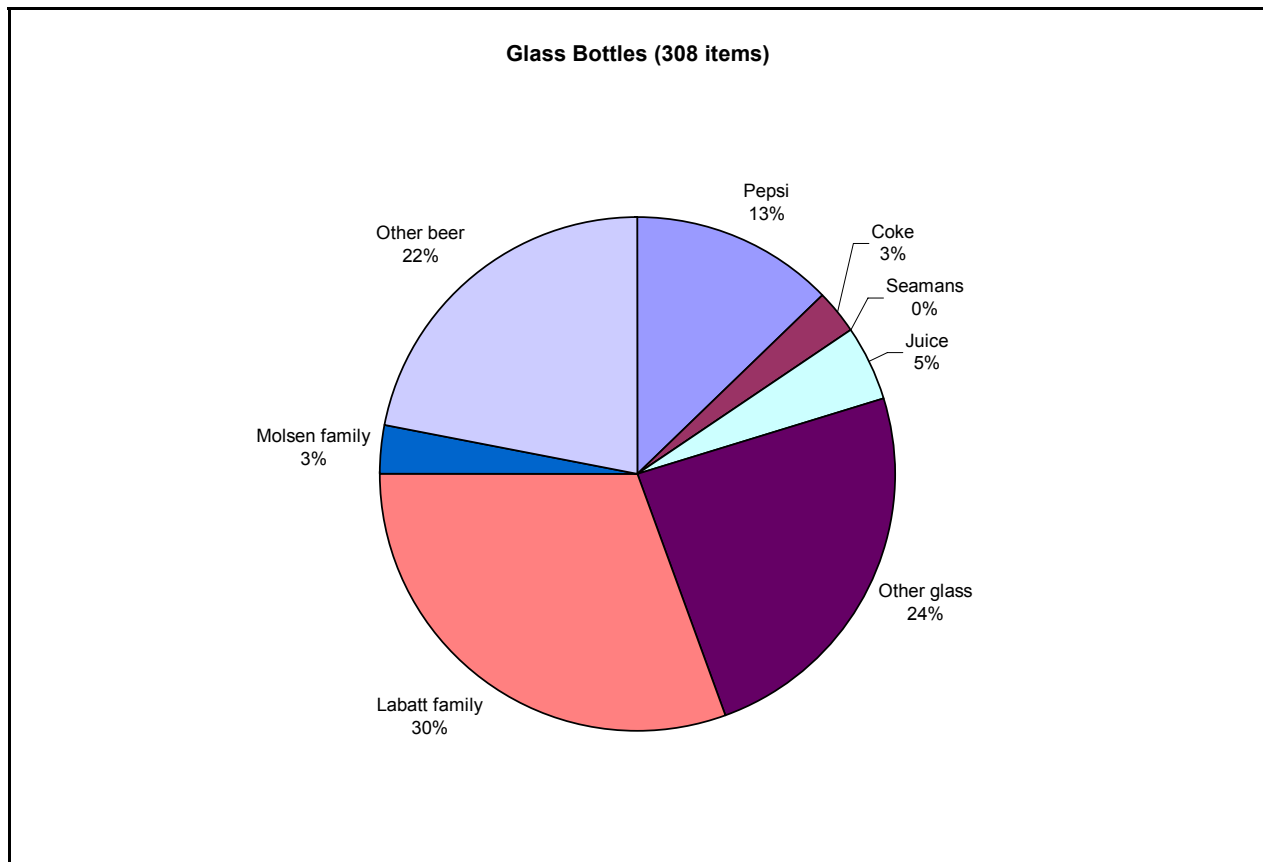
Figure 9. Comparison of 2002, 2003, 2004 and 2005 beverage container categories.



Beverage Containers

Beverage containers formed 8% of the litter collected, an increase from 2004 where it formed 7%. There was an average of 11.20 items collected per site in 2004 versus 12.33 items collected per site in 2005. The increase in the amount of glass bottles collected per site accounted for most of this increase.

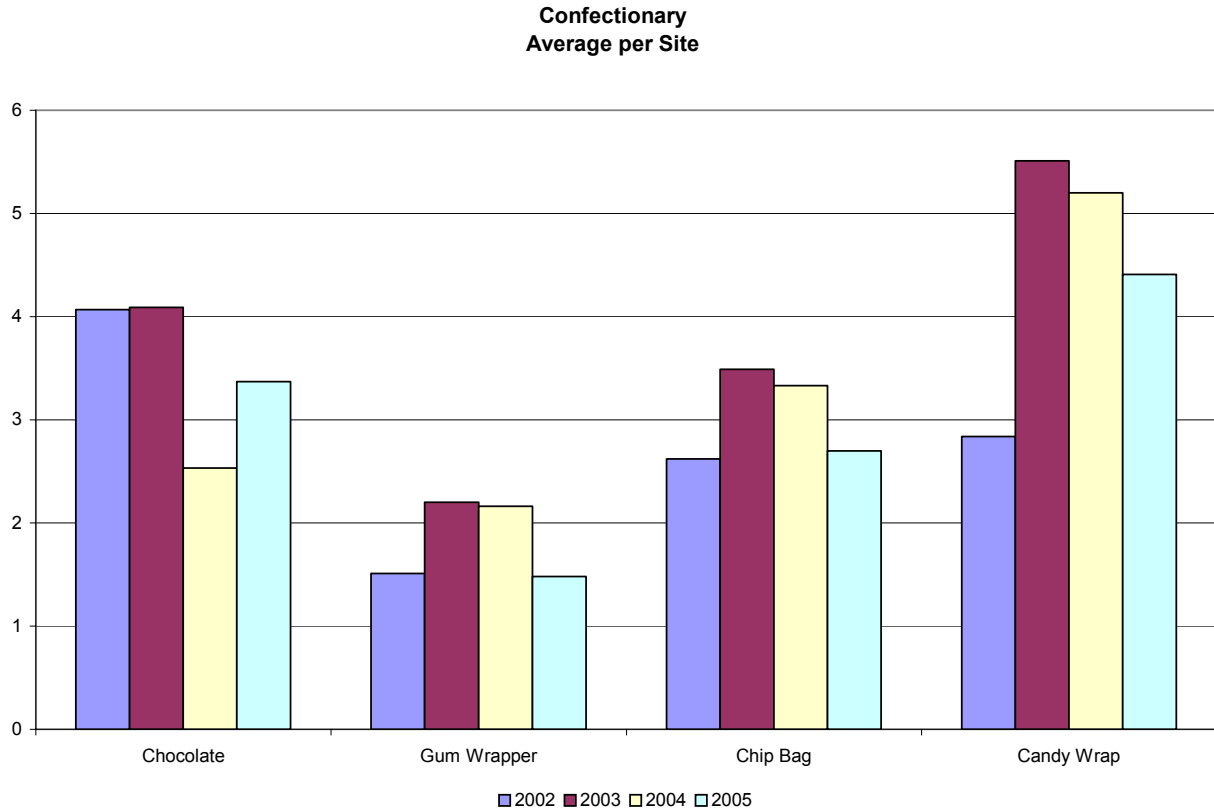
Figure 10. Distribution by brand name of glass beverage bottles collected.



Glass Bottles

Glass bottles represented 4.4% of the total litter found at roadside with 308 items collected at the 46 sites. Both beer and flavoured carbonated beverages (pop) are sold in PEI in refillable glass bottles only. Any unbroken bottles are typically collected and returned for refund for their deposit value. Beer bottles comprised over half of the glass bottles found. The largest beer bottle group at 30% was the Labatt brand which includes products such as Alexander Keiths, Blue and Olands. Likewise, Pepsi and Coke indicated in the survey capture the family of soft drinks offered by each company. “Other beer” is comprised of brands not already identified in the survey such as Corona, Becks or Heineken or beer bottles without a label. “Other glass” covers products such as ice tea or products without a label that did not fit into another category.

Figure 11. Comparison of 2002, 2003, 2004 and 2005 confectionary categories.



Confectionary

The category of confectionary represented approximately 8% (526 items) of the litter collected at roadside. There was a slight improvement in the amount of confectionary items found with an average 13.22 items collected per site in 2004 and 11.96 items collected per site in 2005. The composition of the confectionary items by brand can be found in Figure 12 on the following page.

Figure 12. Distribution by brand of confectionary items collected.

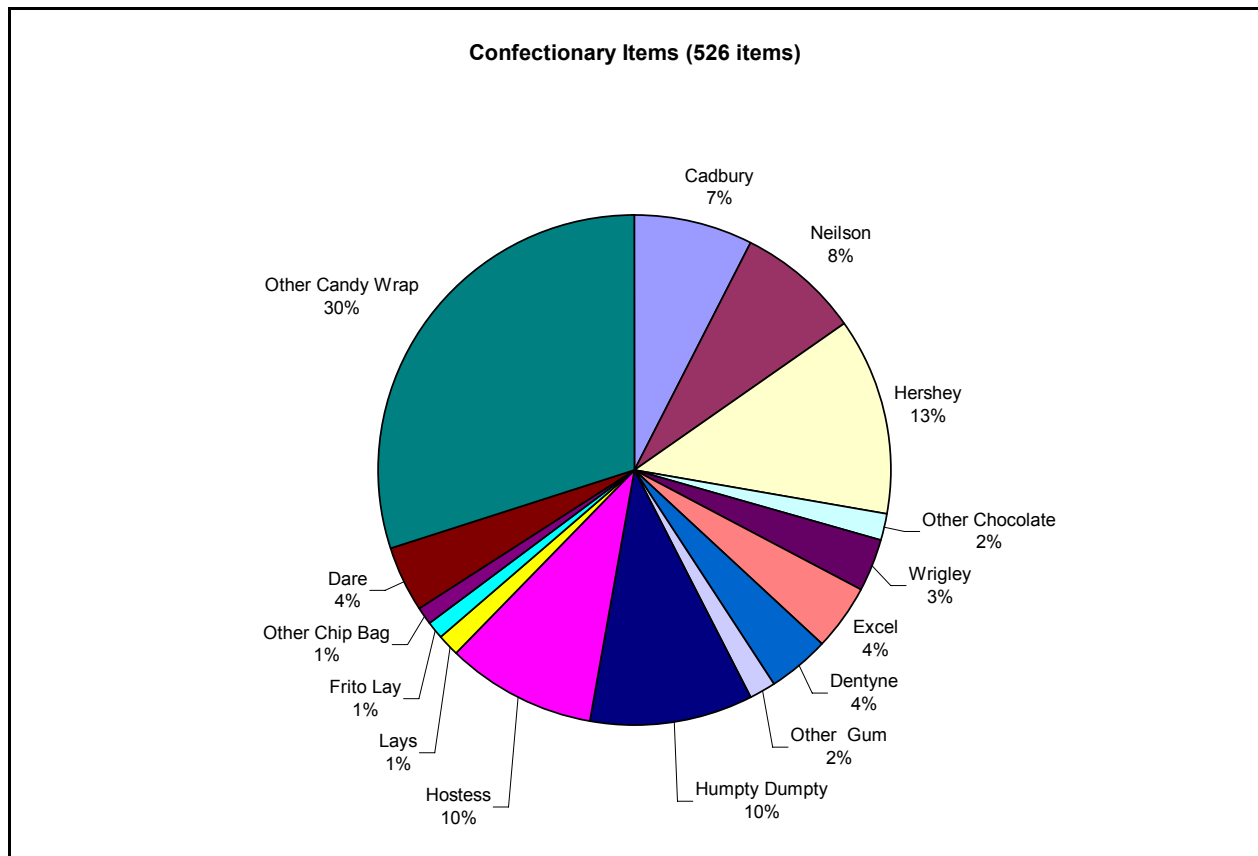
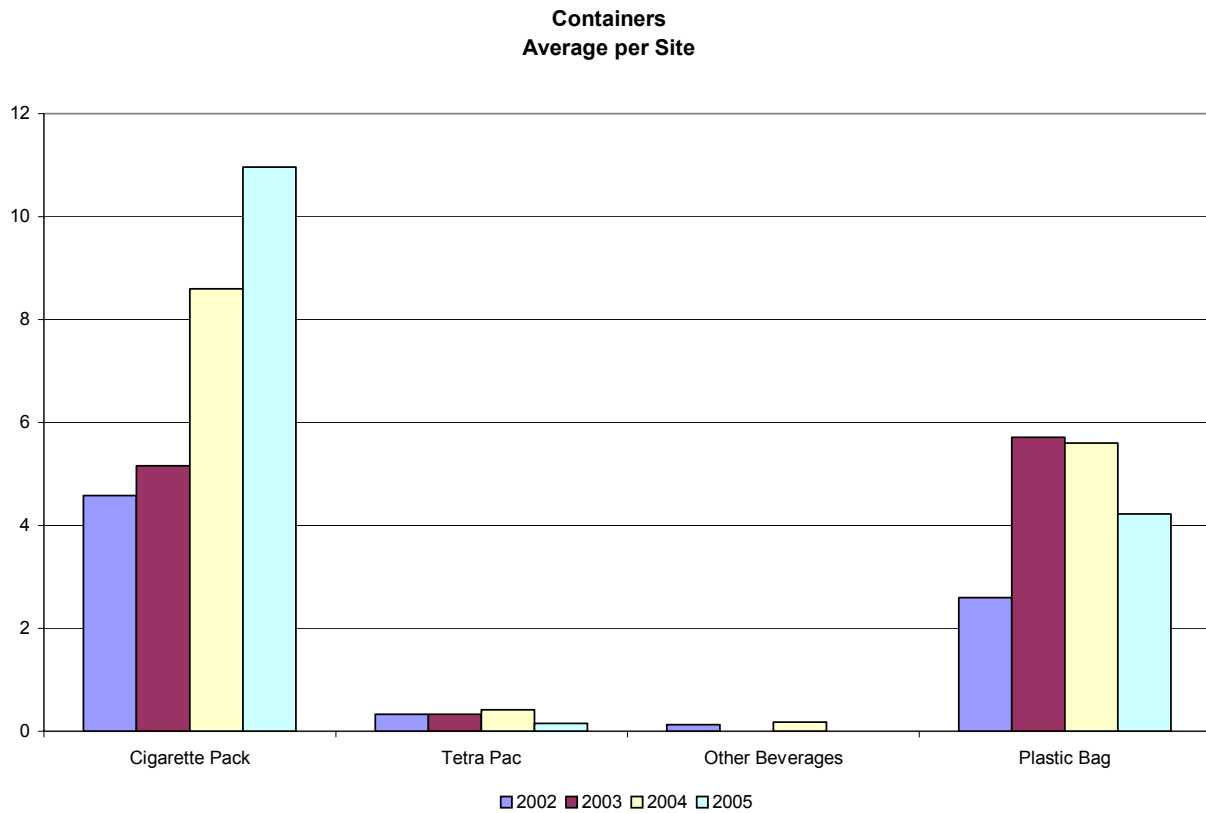


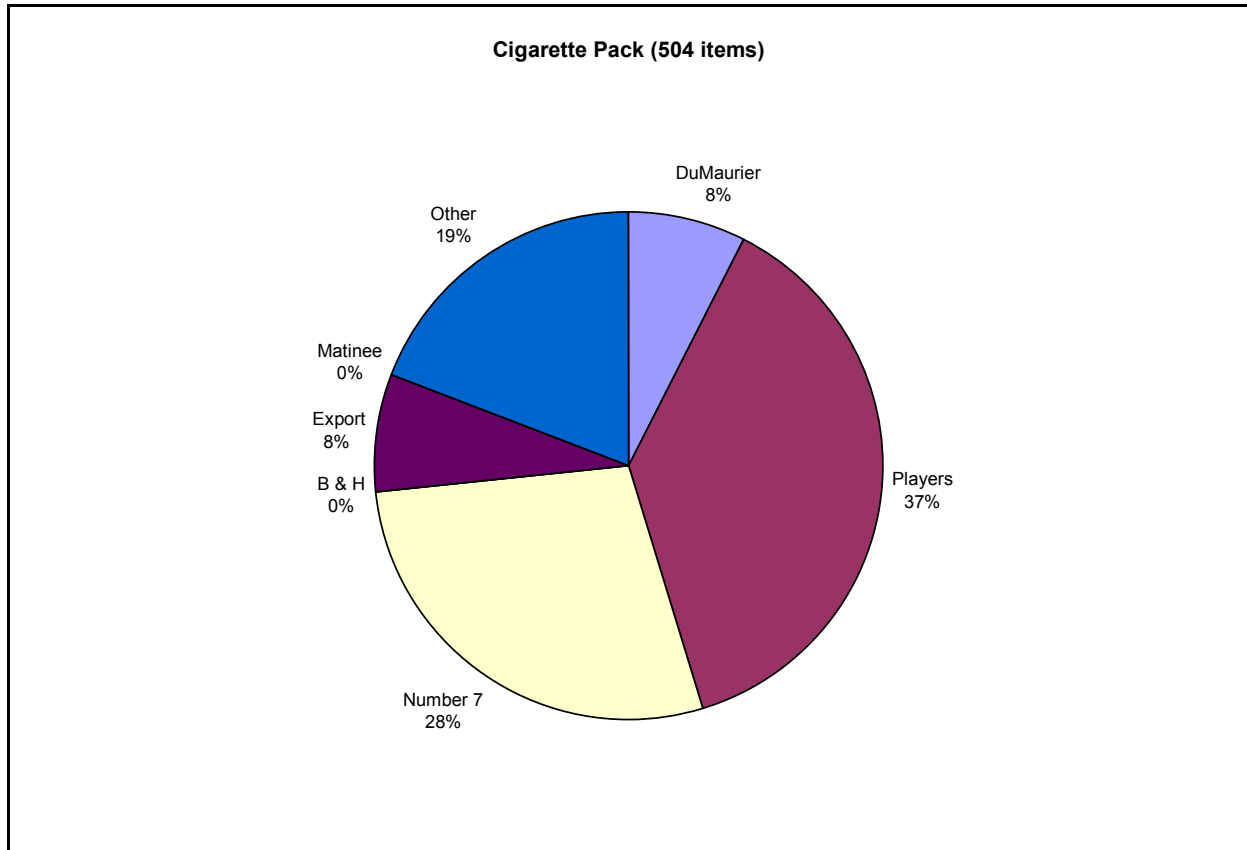
Figure 13. Comparison of 2002, 2003, 2004 and 2005 container categories.



Containers

Containers represented 10% of the litter collected at roadside with an average of 15.33 items collected per site in 2005. This is a slight increase over 2004 when an average of 14.8 items were collected per site. The increase is attributed to the larger number of cigarette packages collected.

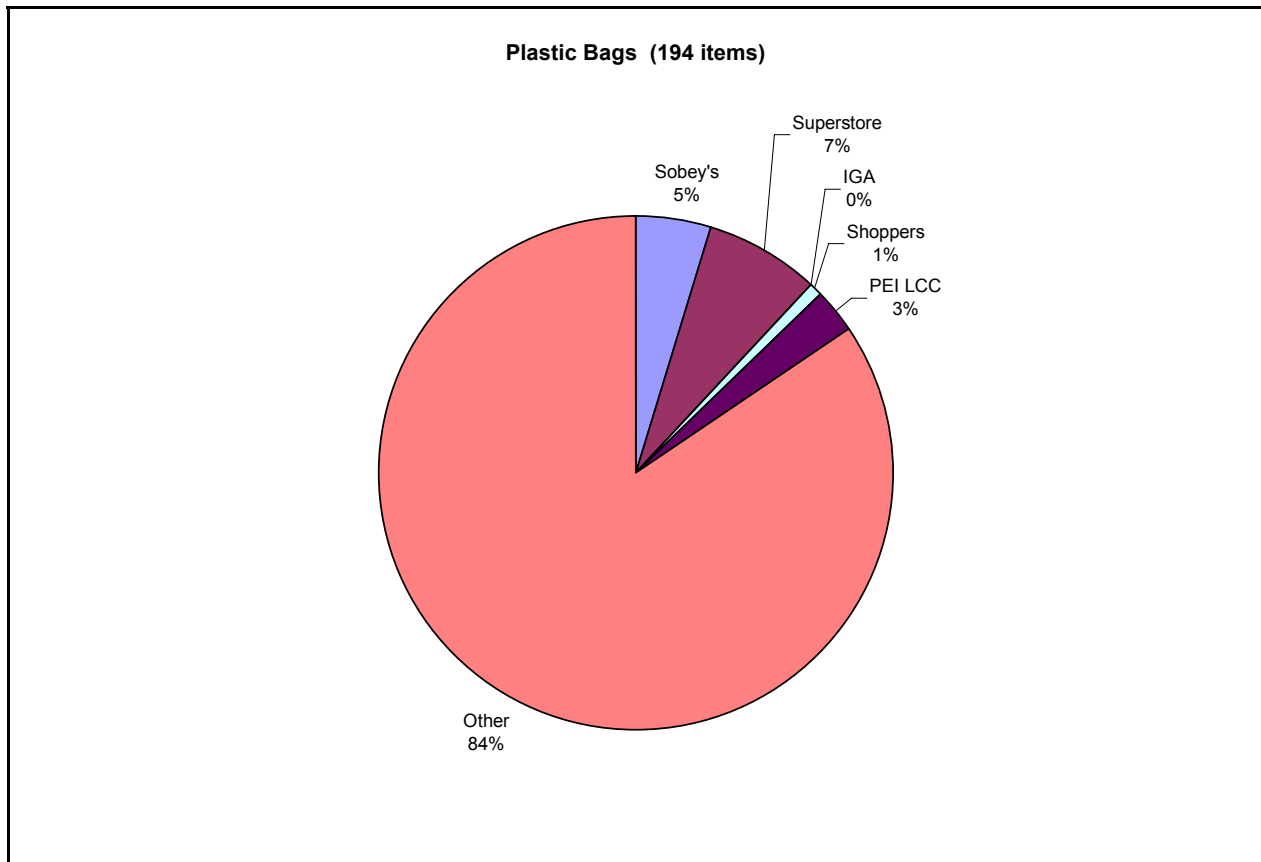
Figure 14. Distribution by brand of cigarette packages collected.



Cigarette Packages

Two brands dominated the cigarette packages found at roadside. These were Players (37%) and Number 7 (28%). The average number of cigarette packages found per site has steadily increased since the surveys began in 2002 with a low of 4.58 items per site to a high of 10.96 items per site this year (2005). As an overall component of the litter found, it has increased from 5% in 2004 to 7% in 2005.

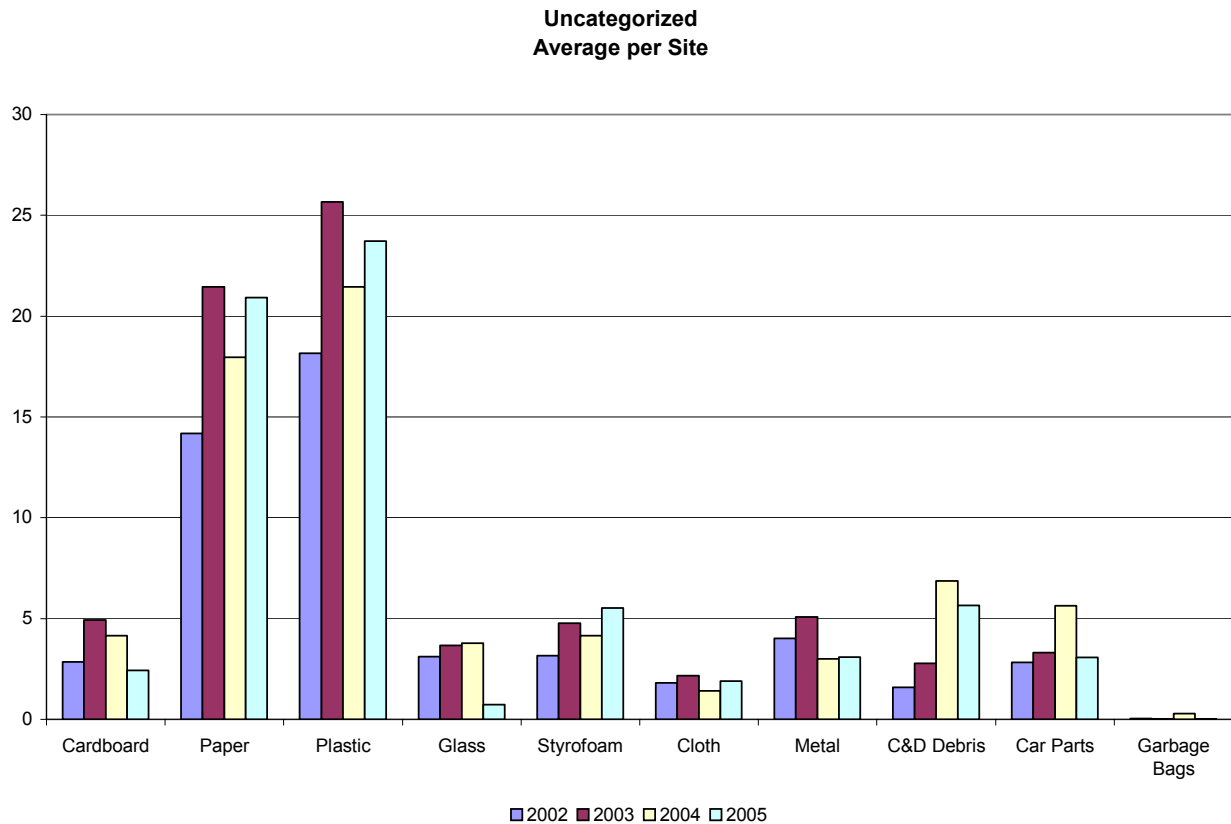
Figure 15. Distribution by brand of plastic bags collected.



Plastic Bags

The total number of plastic bags collected represent 2.8% of the total items found at roadside. The majority of bags collected, represented by the “other” category, did not have a brand name. Most were the generic white bag similar to those distributed from corner convenience stores and other small retail outlets.

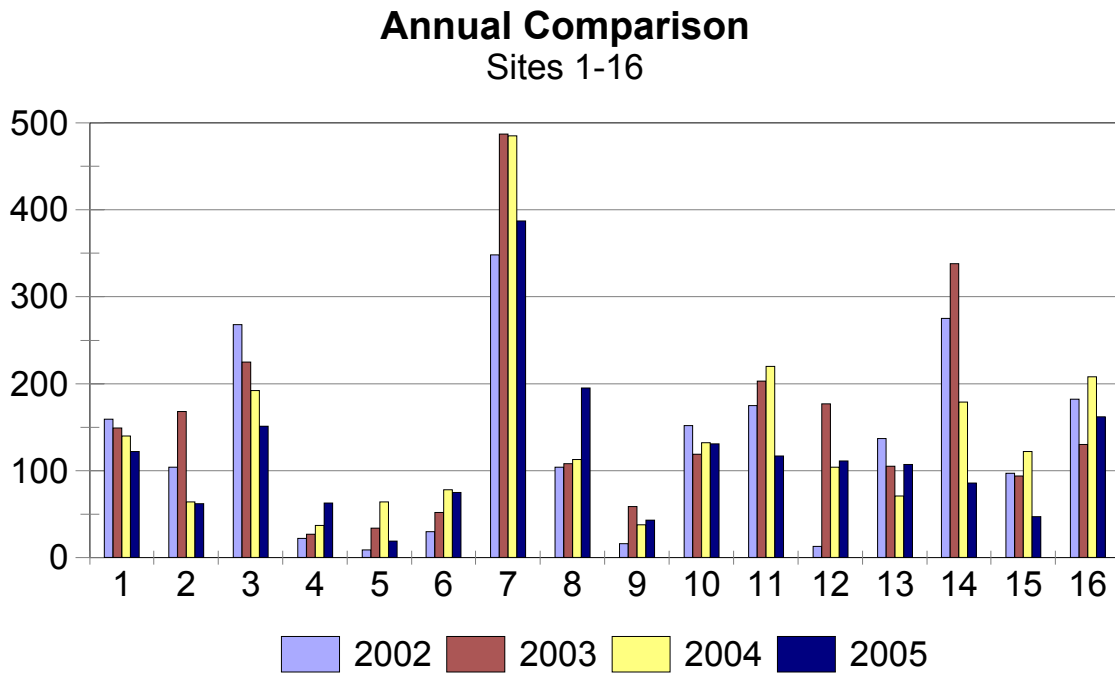
Figure 16. Comparison of 2002, 2003, 2004 and 2005 uncategorized items categories.



Uncategorized

Uncategorized waste is perennially the largest category (44% in 2005) of litter collected from roadside. The product types within the category are generally generic and do not have a recognizable brand. Paper and plastic waste comprise the bulk of the litter collected with an average of 20.91 and 23.72 items collected per site. Garbage bags indicates full bags collected and not sorted for their contents. C&D debris is construction or demolition material and includes items such as shingles, siding and insulation.

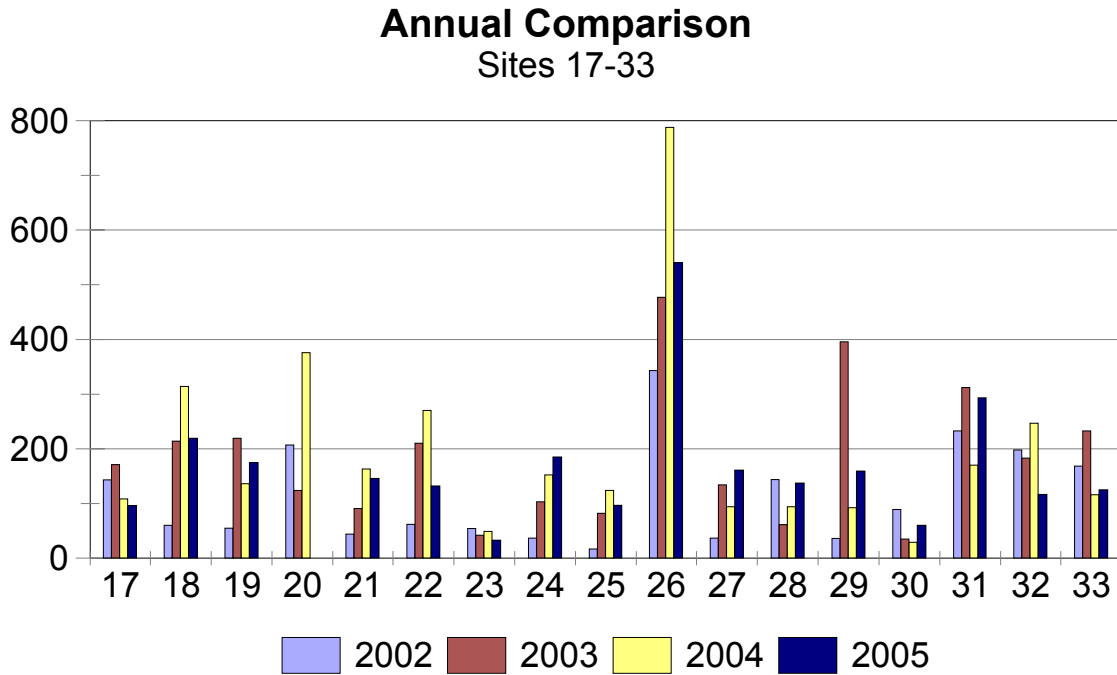
Figure 17. Annual comparison of 2002, 2003, 2004 and 2005 items found in sites 1-16.



Sites 1-16

Site 5 (Morell) has consistently been the cleanest site surveyed, with only 19 items collected in 2005. Site 7 (Hazelbrook) was the third worst site with 387 items collected in 2005.

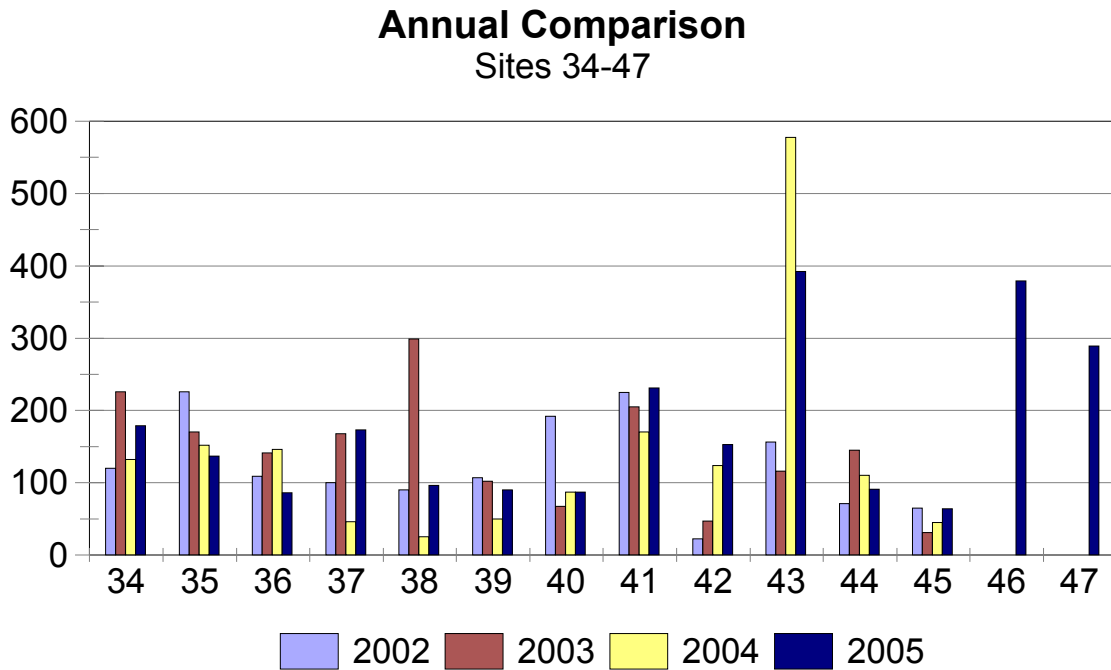
Figure 18. Annual comparison of 2002, 2003, 2004 and 2005 items found in sites 17-33.



Sites 17-33

It should be noted that this graph has a different scale than either Figure 17 or Figure 19. The peak is at close to 800 items found at one location in 2004. Site 26 (Bypass Road) continues to have the most items found of any site on PEI with 540 items of litter collected in 2005. Sites 22 (St. Peters Road) and 26 (Bypass Road) are located in Charlottetown. Site 23 (Route 104, Indian River) is among the cleaner sites with only 33 items collected in 2005. Site 20 (Vernon River) was not surveyed this year because it had been cleaned prior to the survey. The information (or lack thereof) was not included in the analysis of roadside litter.

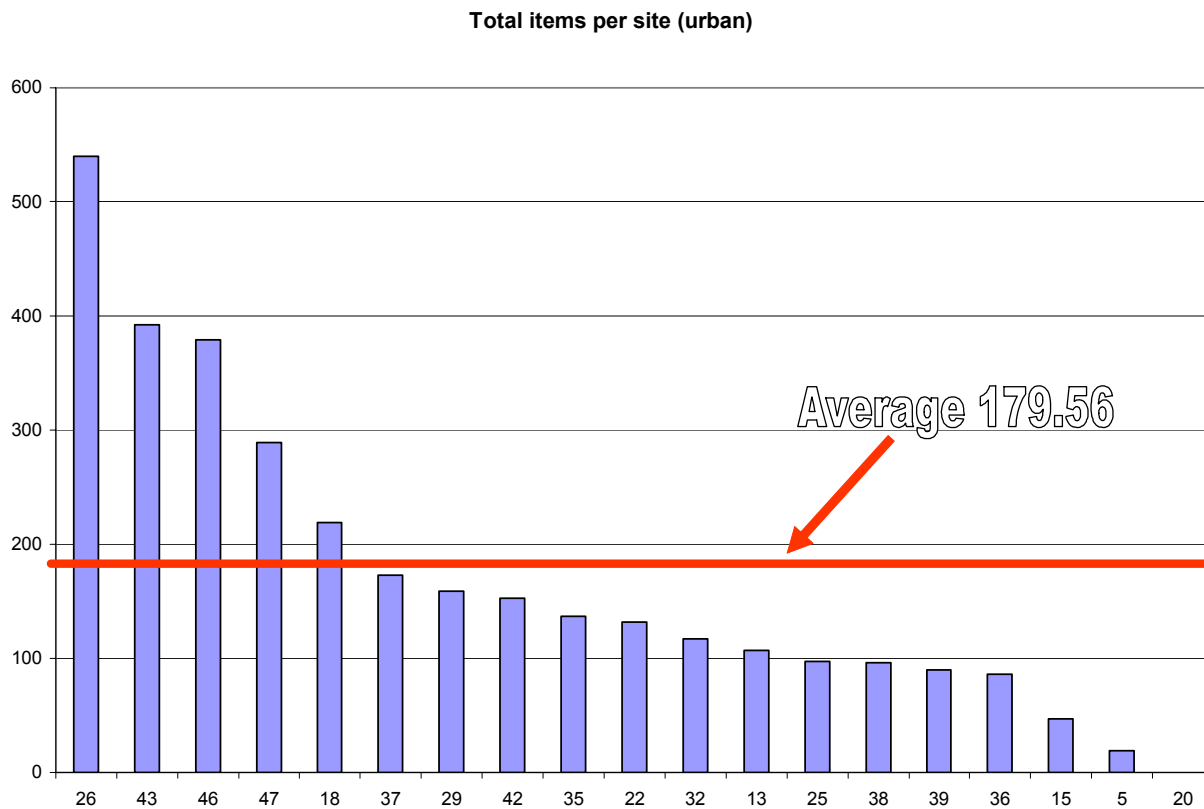
Figure 19. Annual comparison of 2002, 2003, 2004 and 2005 items found in sites 34-47.



Sites 34-47

Sites 46 (University Ave. to Kent St.) and 47 (University Ave. and Belvedere) were added in Charlottetown this year and have no previous data for comparison. Sites 37 (Rte 2) and 38 (Central St.) are located in Summerside. Sites 43 (Cornwall) and 46 (University Ave. to Kent St.) were in the top five worst sites recorded in 2005.

Figure 20. Total items collected per site in urban locations.

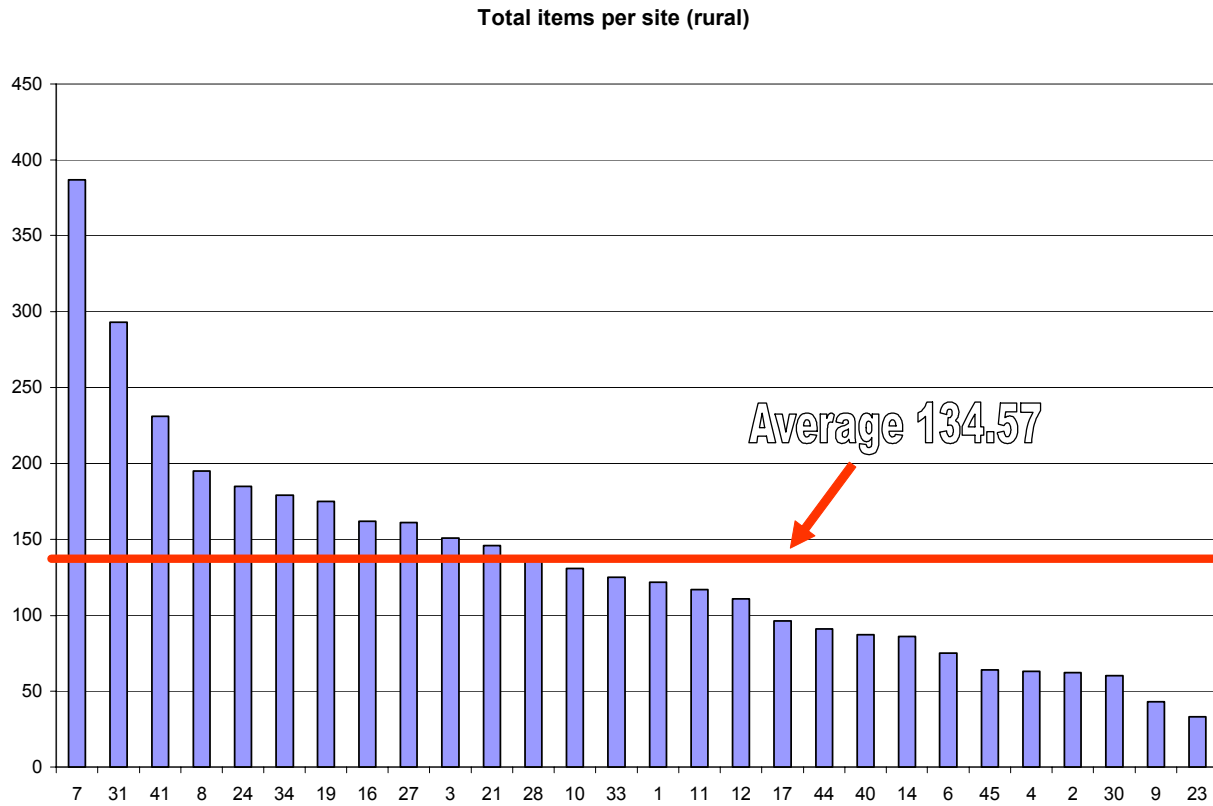


Urban areas

The average number of items collected in urban sites is 179.56. This compares to 134.57 items collected in rural areas. Five sites exceed the average while thirteen are below. These sites draw the average upward due to the large numbers of items collected at each site. Sites 26 (Bypass Rd.), 43 (Cornwall) and 46 (University Ave. to Kent St.) were in the top five of the worst sites surveyed in 2005. Site 20 (Vernon River) was not included in the average since it was not sampled in 2005.

Sites 46 (University Ave. to Kent St.) and 47 (University Ave. and Belvedere) were added for the 2005 survey. Most garbage on University and Belvedere was not within the survey distance from the road (see page 5 for site criteria). With open field next to the road, most litter was caught by the tree line in the distance. Planters along University Avenue were noted as being used as refuse containers even with garbage containers located at most street corners.

Figure 21. Total items collected per site in rural locations.



Rural areas

The average of waste in rural areas is less than that of the urban areas. The number of sites above (12 sites) and below (16 sites) the average are more evenly balanced meaning that the results of a few sites are not skewing the average. Sites 7 (Hazelbrook) and 31 (Brookfield) are in the top five of the worst sites surveyed in 2005 (see Appendix ‘D’).

Appendix 'A' - Survey Locations

<u>No.</u>	<u>Site</u>	<u>County</u>	<u>Setting</u>
1	Wilmot	Kings	Rural
2	Orwell	Kings	Rural
3	Peters Road	Kings	Rural
4	Avondale	Queens	Rural
5	Morell	Kings	Urban
6	Sturgeon	Kings	Rural
7	Hazelbrook	Queens	Rural
8	Dunstaffnage	Queens	Rural
9	Rte 246 - Stanchel	Queens	Rural
10	Primrose	Kings	Rural
11	Fortune	Kings	Rural
12	Five Houses	Kings	Rural
13	St Peters	Kings	Urban
14	Lwr Montague	Kings	Rural
15	Cardigan	Kings	Urban
16	Souris	Kings	Rural
17	Kilmuir	Kings	Rural
18	Pooles Corner	Kings	Urban
19	48 Road	Kings	Rural
20	Vernon	Kings	Urban
21	St. Roch	Prince	Rural
22	St Peters Rd	Queens	Urban
23	Rte 104 - Indian River	Prince	Rural
24	Rte 150	Prince	Rural
25	Rte 11 - Abram's Village	Prince	Urban
26	Bypass Rd	Queens	Urban
27	Rte 142	Prince	Rural
28	Rte 2 - Springfield	Queens	Rural
29	Rte 2 - Up from Bloomfield Corner	Prince	Urban
30	Rte 224 - St Anns	Queens	Rural
31	Brookfield	Queens	Rural
32	Brackley Pt Road	Queens	Urban
33	Desable	Queens	Rural
34	Inverness/Portage	Prince	Rural
35	Kensington	Prince	Urban
36	Kinkora	Prince	Urban
37	Rte 2 - Summerside	Prince	Urban
38	Central St - Summerside	Prince	Urban
39	Miscouche	Prince	Urban
40	New London	Queens	Rural
41	St. Hubert	Prince	Rural
42	Rte 12 - Poplar Grove	Prince	Urban
43	Cornwall	Queens	Urban
44	North Tryon	Prince	Rural
45	Summerville Rte 420	Kings	Rural
46	(Charlottetown) University Ave. to Kent St.	Queens	Urban
47	University Ave & Belvedere Ave.	Queens	Urban

Appendix 'B' - Average Units per Site

(100 metres both sides)

Product	2002	2003	2004	2005
Cups	14.58	19.02	15.64	13.72
Lids	11.29	14.91	12.80	12.00
Straws	5.51	5.31	5.13	5.13
Paper Food Package	2.31	2.38	7.69	4.61
Plastic Food Package	0.33	0.44	3.27	1.74
Foil Food Package	3.47	1.38	2.82	3.17
Styrofoam Food Package	0.40	0.09	0.47	0
Sauce Package	1.58	2.31	2.00	1.80
Napkin	3.02	2.16	2.24	1.98
Cutlery	1.13	0.91	0.76	0.87
Can	2.78	3.49	2.47	1.63
Plastic Bottle	2.56	3.93	4.13	3.50
Glass Bottle	2.18	4.56	4.44	6.70
Carton	0.69	0.53	0.16	0.50
Chocolate	4.07	4.09	2.53	3.37
Gum Wrapper	1.51	2.20	2.16	1.48
Chip Bag	2.62	3.49	3.33	2.70
Candy Wrap	2.84	5.51	5.20	3.89
Cigarette Pack	4.58	5.16	8.60	10.96
Tetra Pac	0.33	0.33	0.42	0.15
Other Beverages	0.13	0	0.18	0
Plastic Bag	2.60	5.71	5.60	4.22
Cardboard	2.84	4.93	4.16	2.43
Paper	14.18	21.44	17.96	20.91
Plastic	18.16	25.67	21.44	23.72
Glass	3.11	3.67	3.78	0.72
Styrofoam	3.16	4.78	4.16	5.52
Cloth	1.82	2.16	1.42	1.89

Metal	4.02	5.09	3.00	3.09
C&D Debris	1.58	2.78	6.87	5.65
Car Parts	2.82	3.31	5.64	3.07
Garbage Bags	0.04	0.02	0.29	0.02
Total	122.24	161.76	160.76	151.14

Product	2002	2003	2004	2005
Cigarette Butt (3 sites only)	461.33	708.00	773.00	604.00

Appendix 'C' - Site-by-site Comparison

<u>No.</u>	<u>Site</u>	<u>County</u>	<u>Setting</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
1	Wilmot	Kings	Rural	159	149	140	122
2	Orwell	Kings	Rural	104	168	64	62
3	Peters Road	Kings	Rural	268	225	192	151
4	Avondale	Queens	Rural	22	27	37	63
5	Morell	Kings	Urban	9	34	64	19
6	Sturgeon	Kings	Rural	30	52	78	75
7	Hazelbrook	Queens	Rural	348	487	485	387
8	Dunstaffnage	Queens	Rural	104	108	113	195
9	Rte 246 - Stanchel	Queens	Rural	16	59	38	43
10	Primrose	Kings	Rural	152	119	132	131
11	Fortune	Kings	Rural	175	203	220	117
12	Five Houses	Kings	Rural	13	177	104	111
13	St Peters	Kings	Urban	137	105	71	107
14	Lwr Montague	Kings	Rural	275	338	179	86
15	Cardigan	Kings	Urban	97	94	122	47
16	Souris	Kings	Rural	182	130	208	162
17	Kilmuir	Kings	Rural	143	171	108	96
18	Pooles Corner	Kings	Urban	60	214	314	219
19	48 Road	Kings	Rural	55	219	136	175
20	Vernon	Kings	Urban	207	124	376	N/A
21	St. Roch	Prince	Rural	44	91	163	146
22	St Peters Rd	Queens	Urban	62	210	270	132
23	Rte 104 - Indian River	Prince	Rural	54	42	49	33
24	Rte 150	Prince	Rural	37	103	152	185
25	Rte 11 - Abram's Village	Prince	Urban	17	82	124	97
26	Bypass Rd	Queens	Urban	343	477	788	540
27	Rte 142	Prince	Rural	37	134	94	161
28	Rte 2 - Springfield	Queens	Rural	144	61	94	137
29	Rte 2 - Up fr. Bloomfield Corner	Prince	Urban	36	396	92	159
30	Rte 224 - St Anns	Queens	Rural	89	35	29	60
31	Brookfield	Queens	Rural	233	312	170	293
32	Brackley Pt Road	Queens	Urban	198	183	247	117
33	Desable	Queens	Rural	168	233	116	125
34	Inverness/Portage	Prince	Rural	120	226	132	179
35	Kensington	Prince	Urban	226	170	152	137
36	Kinkora	Prince	Urban	109	141	146	86
37	Rte 2 - Summerside	Prince	Urban	100	168	46	173
38	Central St - S'side	Prince	Urban	90	299	25	96
39	Miscouche	Prince	Urban	107	102	50	90
40	New London	Queens	Rural	192	67	87	87
41	St Hubert	Prince	Rural	225	205	170	231
42	Rte 12 - Poplar Grove	Prince	Urban	22	47	124	153
43	Cornwall	Queens	Urban	156	116	578	392
44	North Tryon	Prince	Rural	71	145	110	91
45	Summerville Rte 420	Kings	Rural	65	31	45	289
46	Downtown (Ch-Town)	Queens	Urban	N/A	N/A	N/A	379
47	University Ave & Belvedere	Queens	Urban	N/A	N/A	N/A	289

Appendix 'D' - Ranking of Survey Sites

No.	Site	County	Setting	2005	Rank
26	Bypass Rd	Queens	Urban	540	1
43	Cornwall	Queens	Urban	392	2
7	Hazelbrook	Queens	Rural	387	3
46	Downtown (Ch-Town)	Queens	Urban	379	4
31	Brookfield	Queens	Rural	293	5
47	University Ave & Belverdere	Queens	Urban	289	6
41	St Hubert	Prince	Rural	231	7
18	Pooles Corner	Kings	Urban	219	8
8	Dunstaffnage	Queens	Rural	195	9
24	Rte 150	Prince	Rural	185	10
34	Inverness/Portage	Prince	Rural	179	11
19	48 Road	Kings	Rural	175	12
37	Rte 2 - Summerside	Prince	Urban	173	13
16	Souris	Kings	Rural	162	14
27	Rte 142	Prince	Rural	161	15
29	Rte 2 - Up fr. Bloomfield Corner	Prince	Urban	159	16
42	Rte 12 - Poplar Grove	Prince	Urban	153	17
3	Peters Road	Kings	Rural	151	18
21	St. Roch	Prince	Rural	146	19
35	Kensington	Prince	Urban	137	20
28	Rte 2 - Springfield	Queens	Rural	137	20
22	St Peters Rd	Queens	Urban	132	22
10	Primrose	Kings	Rural	131	23
33	Desable	Queens	Rural	125	24
1	Wilmot	Kings	Rural	122	25
11	Fortune	Kings	Rural	117	26
32	Brackley Pt Road	Queens	Urban	117	26
12	Five Houses	Kings	Rural	111	28
13	St Peters	Kings	Urban	107	29
25	Rte 11 - Abram's Village	Prince	Urban	97	30
38	Central St - S'side	Prince	Urban	96	31
17	Kilmuir	Kings	Rural	96	31
44	North Tryon	Prince	Rural	91	33
39	Miscouche	Prince	Urban	90	34
40	New London	Queens	Rural	87	35
14	Lwr Montague	Kings	Rural	86	36
36	Kinkora	Prince	Urban	86	36
6	Sturgeon	Kings	Rural	75	38
45	Summerville Rte 420	Kings	Rural	64	39
4	Avondale	Queens	Rural	63	40
2	Orwell	Kings	Rural	62	41
30	Rte 224 - St Anns	Queens	Rural	60	42
15	Cardigan	Kings	Urban	47	43
9	Rte 246 - Stanchel	Queens	Rural	43	44
23	Rte 104 - Indian River	Prince	Rural	33	45
5	Morell	Kings	Urban	19	46
20	Vernon	Kings	Urban	N/A	N/A

Appendix 'E' Sample Survey Sheet

Site: _____ Samplers: _____

Date/Time: _____

Beginning Point: _____

Food Container	Cup	Lid	Straw	Paper	Sauce	Napkin	Plastic	Bag/waste	Foil	Fries
Subway										
KFC										
McD's										
D.Q.										
B. King										
Wendy's										
Robin's										
Irving										
Tim's										
Other										

Beverage	Cap	Glass Bottle	Plastic Bottle	Carton	Tetra Pac	Can
Pepsi						
Coke						
Aquafina water						
Dasani water						
Seaman's						
Juice						
ADL						
Purity						
Montague						
Perfection						
Elmer's/Farmers						
Other						

Beer Bottles	Bottle	Cap	No Label	Broken	Box
Labatt (Oland/Keiths/Moosehead)					
Molson (Coors/Fosters/Millers)					

Confectionary	Plastic Food	Chocolat	Gum	Chip Bag	Candy Wrap	Foil Food Wrap
Humpty						
Hostess						
Cadbury						
Neilson						
Hershey						
Wrigley						
Excel						
Dare						
Dentyne						
Good Humour						

	DuMaurier	Players	Number 7	B&H	Export	Matinee	Other
Cigarette Pack							

	Sobeys	Superstore	IGA	Shoppers	PEI LCC	Other
Plastic Bag						

Uncategorized	
Cardboard	
Paper	
Plastic	
Glass	
Styrofoam	
Cloth	
Metal	
C&D Debris	
Car Parts	
Cigarette Foil	
Cigarette Plastic	
Other	