



**NATIONAL LITTER INDEX  
2018 - 2019**

**WESTERN AUSTRALIA RESULTS**

**KEEP AUSTRALIA BEAUTIFUL NATIONAL ASSOCIATION  
July 2019**

[www.kab.org.au](http://www.kab.org.au)

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## ***Introduction***

The 2018/19 survey reports the results of biannual litter counts at the same, undisclosed 151 sites across Western Australia. While over time additional rural highway sites have been added, the heart of the survey remains and the NLI is Australia's only long term, consistent survey of litter. Also unchanged is its aim to build a deeper understanding of what is being littered, and where, and how that is changing over time.

The National Litter count was initiated in during November 2005, with a second count conducted in May 2006. The National KAB reporting commenced in 2006/07, the 2019/19 National litter counts were conducted during November 2018 and May 2019.

## ***Purpose***

The purpose of the National Litter Index is to provide insight regarding:

- The presence of litter items at sites within broadly comparable regions.
- Estimated volumes of litter objects within the litter stream, based upon a volume-per-item model.
- The contribution of objects recognised within established litter categories to the overall litter stream.

It is expected that the information derived from this research will be used by governments and community organisations to develop policies/ programs that will reduce litter and create increased pride in communities.

## ***Limitations***

The National Litter Index is not a study of littering behaviour. It is exclusively intended as an assessment of the presence of litter objects within surveyed regions. As such, no corrections for population densities are carried out. The information derived from the Index provides no indication of whether residents of a particular region litter more or less frequently than those in a different region. It does, however, provide insight regarding (a) the relative presence or absence of litter objects and particular material types within the regions surveyed, and (b) result trends over time. As such, findings are considered to be broadly but tentatively standardised to regions of a similar type.

## ***Methodology***

### **Scope**

Sites surveyed within the research program were sampled primarily from urban and near-urban areas (i.e. generally within 50km of the urban areas surrounding each state capital). Generalisation of findings to regional locations must therefore be made with caution.

The total area surveyed across all NLI sites in Western Australia was 235,966m<sup>2</sup>. This area spanned a total of 151 sites.

## **Sites**

All sites incorporated within the survey were categorised according to 8 different site types. Uniform guidelines were conformed to during site selection. Site specifications vary from 500 square metres (beaches) to 3,000 square metres (highways).

### **Residential**

A street area approximately 150 metres in length, along both sides of the road from the front of the properties on each side of that road extending to the gutter including litter in the gutter.

### **Beach**

An area of approximately 50 metres long and 10 metres wide, positioned on one or across both sides of a jetty, boat ramp or main entry access point to beach.

### **Industrial**

A street area approximately 150 metres long within an industrial area, the count area to be from the fence line or immediate front of the properties to the gutter including litter in the gutter

### **Car Park**

An area of approximately 30 by 50 metres in an open space public car park at a point distant from the entrance to the car park.

### **Shopping Centre**

An area approximately 50 metres long and 25 metres wide, directly outside of the main shopping centre building and including one or across both sides of a major entrance.

### **Retail Strip/ Shops - Street Precinct**

An area approximately 150 metres long in front of a strip of shops, extending from the front of the shops to the street gutter and including litter in the gutter.

### **Recreational Park**

An area of approximately 40 by 50 metres in a park area which includes a playground but which is not in the immediate vicinity of a shop or kiosk. The areas should be within a frequently used park.

### **Highway**

Highways include open major roadways bounded by a vegetated area that may include an open drain.

The count area commences from the area beginning at the edge of the road, and extending out from the road to the nearest fence/ boundary or up to a distance of 10 metres out from the road side if no such fence/ boundary exists. Two such areas should be collected from, one on each side of the road. Each region should extend for a length of approximately 200 metres along the road.

### **Site Type Representation**

The following table outlines the number of sites within each of the 8 distinct site types that were sampled within Western Australia.

	<b>All Other States</b>
Beach	16
Car Park	23
Highway	27
Industrial	17
Recreational Park	13
Residential	26
Retail	15
Shopping Centre	14
<b>Total</b>	<b>151</b>

### **Litter Counter Training**

The litter categorisations and assumptions used during the counts of designated sites were broadly as follows:

- A standard data collection form, was used when conducting the litter counts. A copy of this form is provided in the Appendices.
- Counters were trained to carefully analyse the litter to ensure that it was properly identified before recording it on the survey form. For example, to determine whether an item is glass and not clear plastic, or to differentiate between fruit juice and fruit drink as these are recorded on different sections of the form.
- Broken bottles were counted as one bottle, a bag of dumped garbage was considered to be one item of “illegal dumping”, and scattered newspaper pages were counted as one newspaper.
- While individual cigarette butts are counted, where there are large volumes of cigarette butts an estimated count is acceptable.
- For the purpose of the Litter Count, all waste located within any count site is litter apart from that properly disposed of in a waste receptacle.
- Organic matter (including food, chewing gum, and dog faeces) was not recorded during the count.

### **Reporting**

Litter counts have been conducted bi-annually in November and May across the years from 2005/06, unless stated otherwise, the 2018/19 results are reported on an annual basis incorporating average figures corresponding to November 2018 and May 2019 counts.

## Category Consolidation

The NLI is a data rich survey and as a result is complex to interpret. To simplify we have consolidated various litter items into broader categories as represented in the following table.

Most of the groupings should be self-evident but it is worth explaining the beverage container category in more detail. In this instance included in the beverage container category are only those items currently classified as eligible containers as part of the SA, NT, NSW, QLD and ACT CDS schemes.

Consolidated Category	Historical Classification
Butts & Packaging	Cigarette Butts Paper/Paperboard - Cigarette packets
Beverage Containers	Glass - Alcoholic sodas / spirit-based mixers, all sizes Glass - Beer, all colours of glass, <750ml Glass - Beer, all colours of glass, 750ml+ Glass - Cider/fruit based etc. Glass - Flav. water/soft drink (carbonated) <1 litre Glass - Flav. water/soft drink (carbonated) 1 litre+ Glass - Flav.wtr/fruit j. dr/sprts dr, (non-carb), <1 litre Glass - Flav.wtr/fruit j. dr/sprts dr, (non-carb), 1 litre+ Glass - Fruit juice, <1 litre Glass - Plain water (carbonated or non-carb.), <1 litre Glass - Plain water (carbonated or non-carb.), 1 litre+ Glass - Wine cooler, all sizes Metal - Alcoholic sodas & spirit-based mixers Metal - Beer, aluminium, all types, all sizes Metal - Cider/fruit based etc. Metal - Flav. water/soft drink, (carbonated), all sizes Metal - Flav. water/soft drink, (non-carb), all sizes Paper/Paperboard - Cartons, flavoured milk <1 litre Paper/Paperboard - Cartons, fruit juice, <1 litre Paper/Paperboard - Flav. water / fruit j. drink/ sports drink, (non-carb), 1 litre+ Paper/Paperboard - Flav. water/fruit j. drink/sports drink, non-carb, <1 litre Plastic - Drink pouches Plastic - Flav. milk, <1 litre Plastic - Flav. water/soft drink (carbonated) <1 litre Plastic - Flav. wtr/fruit j. dr, sprts dr etc.(non-carb) 1 litre+ Plastic - Flav.wtr/fruit j. dr, sprts dr etc.(non-carb) <1 litre Plastic - Fruit juice <1 litre Plastic - Plain water (carbonated or non-carb) <1 litre Plastic - Plain water (carbonated or non-carb) 1 litre+
Take Away	Metal - Foil take away Metal - Metal bottle tops and can pull rings Miscellaneous - Ice cream sticks Paper/Paperboard - Coffee cups Paper/Paperboard - Cups/take away containers Paper/Paperboard - Ice cream wrappers Plastic - Lollipop sticks Plastic - Plastic bottle tops Plastic - Snack bags & confectionary wrappers Plastic - Spoons/ cutlery Plastic - Straws Plastic - Take away & cups
Other Glass	Glass - Other glass
Other Paper	Paper/Paperboard - Other paper
Other Plastic	Plastic - Other plastic
Plastic Bags	Plastic - Bags - heavier glossy typically branded carry bags Plastic - Bags - supermarket type light weight carry bags
General Other	Glass - Fruit juice, 1 litre+ Glass - Wine & spirit, all sizes Metal - Aerosols - pressure packs Metal - Food cans (including pet food) Metal - Industrial cans - all types Metal - Metal pieces Metal - Other foil Miscellaneous - Clothing & materials Miscellaneous - Condoms Miscellaneous - Construction materials Miscellaneous - Disposable nappies Miscellaneous - Other miscellaneous Miscellaneous - Rubber pieces (not tyres) Miscellaneous - Syringes Miscellaneous - Tyres & pieces Paper/Paperboard - Cartons, flavoured milk 1 litre+ Paper/Paperboard - Cartons, fruit juice, 1 litre+ Paper/Paperboard - Cartons, milk, plain (white) all sizes Paper/Paperboard - Junk mail / free circulars Paper/Paperboard - Newspapers & magazines Paper/Paperboard - Packages & boxes Paper/Paperboard - Paper bags Paper/Paperboard - Shopper docketts & related shopping paper (eg, lists) Paper/Paperboard - Tickets, e.g. bus, ATM, vending machine etc. Plastic - 6 ring can holders Plastic - Bread bag tags Plastic - Containers, domestic type Plastic - Containers, industrial e.g. oil Plastic - Flav. milk, 1 litre+ Plastic - Flav. water/soft drink (carbonated) 1 litre+ Plastic - Fruit juice, 1 litre+ Plastic - Packing tape & straps Plastic - Sacks - sheeting - other bags Plastic - Styrene foam boxes, sheets, etc Plastic - White milk, all sizes Plastic - Wine cask bladders
Illegal Dumping	Illegal Dumping

# Western Australian Results

## Key Messages and Insights

- There was a decrease (-8.5%) in litter items counted in the 2018/19 monitor compared to 2017/18.
- A reduction in cigarette litter (-17.0%) was the main contributor to the decrease in litter counted, while there were moderate decreases associated with other paper (-7.1%), general other litter (-6.7%) and beverage containers (-6.4%).
- Lower levels of litter were counted at beaches (-58.6%), retail precincts (-46.9%), shopping centres (-9.3%), major roads highways (-8.2%) and recreational parks (-1.5%).
- Higher levels of litter were recorded higher levels counted at car parks (+27.7%), residential streets (+4.7%) and industrial precincts (+3.5%).
- There was also a decrease of litter volume (-8.9%) with the largest reductions attributed to lower levels of plastic industrial containers, plastic domestic containers and plastic soft drink bottles <1 litre.
- Industrial precincts continue to recorded the highest loads on an item counted basis whereas major roads/highways continue to have the highest estimated loads on a volumetric basis.

## Survey Specifics

The national litter index surveys 151 sites across Western Australia, with an area surveyed of 235,966 square metres. While city and suburban areas are the primary focus of the survey, a number of regional/rural sites, are also surveyed. The breakdown is shown in the table below.

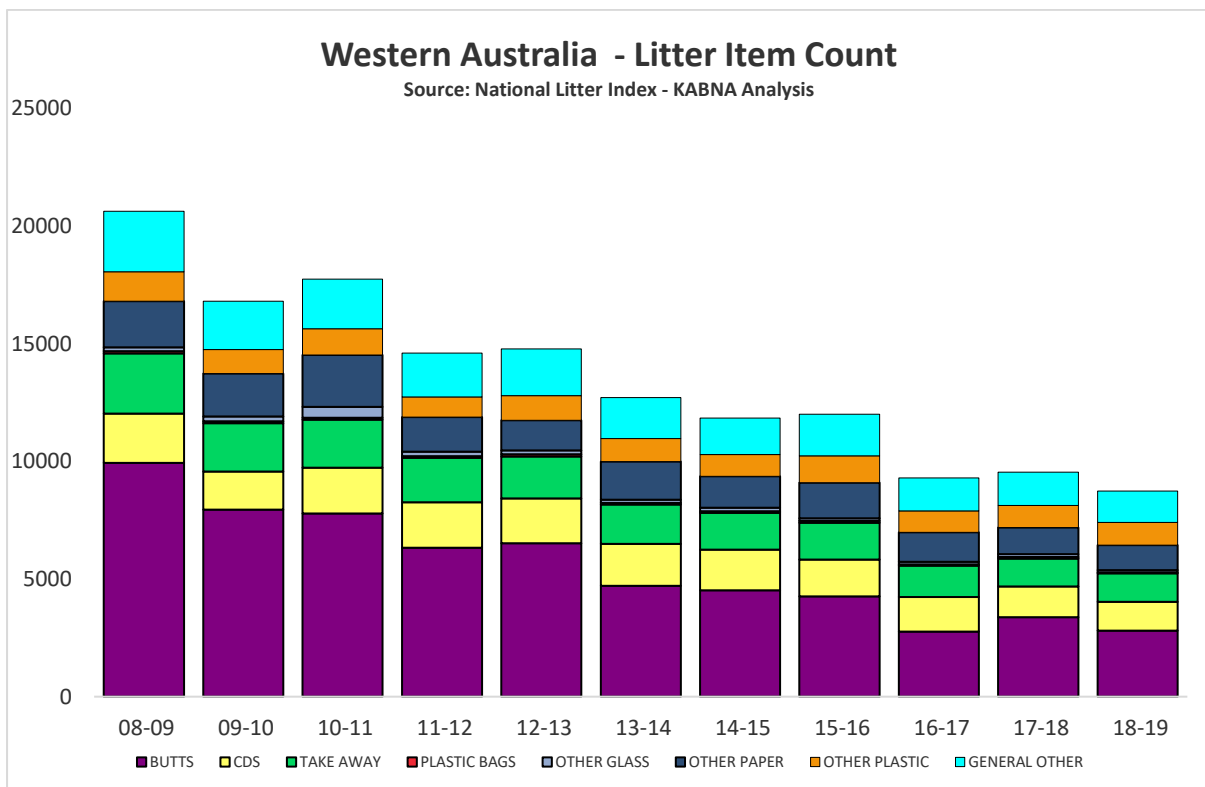
Site Types	Number Surveyed			Area Surveyed (sq m)
	Suburban	Regional	Total	
Recreational Swimming	10	6	16	8,000
Car Parks	19	4	23	34,365
Major Roads/Highways	17	10	27	87,565
Industrial Precincts	13	4	17	14,985
Recreational Parks	7	6	13	26,000
Residential Streets	21	5	26	35,870
Retail Precincts	10	5	15	13,556
Strip Shopping Precincts	12	2	14	15,625
<b>TOTAL</b>	<b>109</b>	<b>42</b>	<b>151</b>	<b>235,966</b>

## Litter Counts

As shown in the following table, the 2018/19 litter monitor recorded 8.5% less litter than counted in the 2017/18 monitor. A fall in cigarette litter (-17.0%) was the main contributor to the decrease in litter counted, while there were moderate decreases associated with other paper (-7.1%), general other litter (-6.7%) and there were also small decreases among litter numbers associated with plastic bags (-29.9%) and other glass (-18.8%). Litter increased however across plastic litter items (+4.0%). And takeaway packaging (+2.2%).

WA		Items								
		Beach	Car Park	Highway	Industrial	Recreational Park	Residential	Retail	Shopping Centre	Total
WA 2018/19	Butts & Packaging	51	864	515	469	35	212	355	304	2803
	Beverage Containers	5	51	1043	75	4	25	19	4	1224
	Takeaway Food & Beverage	41	202	474	140	75	140	89	51	1210
	Other Glass	1	10	55	8	1	11	6	8	97
	Other Paper	20	122	481	116	46	110	87	73	1053
	Other Plastic	26	106	440	151	31	124	49	41	966
	General Other	23	136	717	170	33	156	49	47	1329
	Plastic Bags	1	4	27	7	1	6	2	2	48
	Illegal Dumping			9	1		2	1		12
	GRAND TOTAL	167	1492	3759	1134	224	783	654	529	8741
WA 2017/18	Butts & Packaging	217	694	644	441	30	148	831	372	3376
	Beverage Containers	8	35	1093	85	6	36	35	12	1308
	Takeaway Food & Beverage	60	159	447	101	67	166	132	52	1183
	Other Glass	2	11	84	9		6	6	3	120
	Other Paper	46	88	556	125	53	120	90	57	1134
	Other Plastic	33	87	406	155	37	121	53	40	929
	General Other	37	92	823	172	32	143	81	47	1425
	Plastic Bags	2	4	37	8	3	10	5	2	69
	Illegal Dumping		1	4	1		1	1	1	8
	GRAND TOTAL	403	1168	4093	1096	227	748	1232	583	9550
% REDUCTION	Butts & Packaging	76.5%	-24.5%	20.1%	-6.4%	-16.7%	-43.2%	57.3%	18.3%	17.0%
	Beverage Containers	40.0%	-47.8%	4.6%	11.8%	41.7%	31.0%	46.4%	65.2%	6.4%
	Takeaway Food & Beverage	31.7%	-26.7%	-6.0%	-38.1%	-11.9%	15.7%	32.7%	2.9%	-2.2%
	Other Glass	50.0%	13.6%	35.1%	11.8%		-90.9%	8.3%	-220.0%	18.8%
	Other Paper	56.5%	-38.9%	13.6%	7.6%	14.2%	7.9%	3.3%	-29.2%	7.1%
	Other Plastic	20.0%	-22.5%	-8.4%	2.9%	16.4%	-2.5%	7.5%	-3.8%	-4.0%
	General Other	37.0%	-48.1%	12.8%	1.5%	-3.1%	-9.1%	40.1%		6.7%
	Plastic Bags	66.7%		27.0%	13.3%	80.0%	40.0%	55.6%		29.9%
	Illegal Dumping		100.0%	-112.5%			-50.0%		100.0%	-43.8%
	Grand Total (excluding illegal dumping)	58.6%	-27.8%	8.3%	-3.5%	1.5%	-4.6%	46.9%	9.2%	8.5%
GRAND TOTAL	58.6%	-27.7%	8.2%	-3.5%	1.5%	-4.7%	46.9%	9.3%	8.5%	

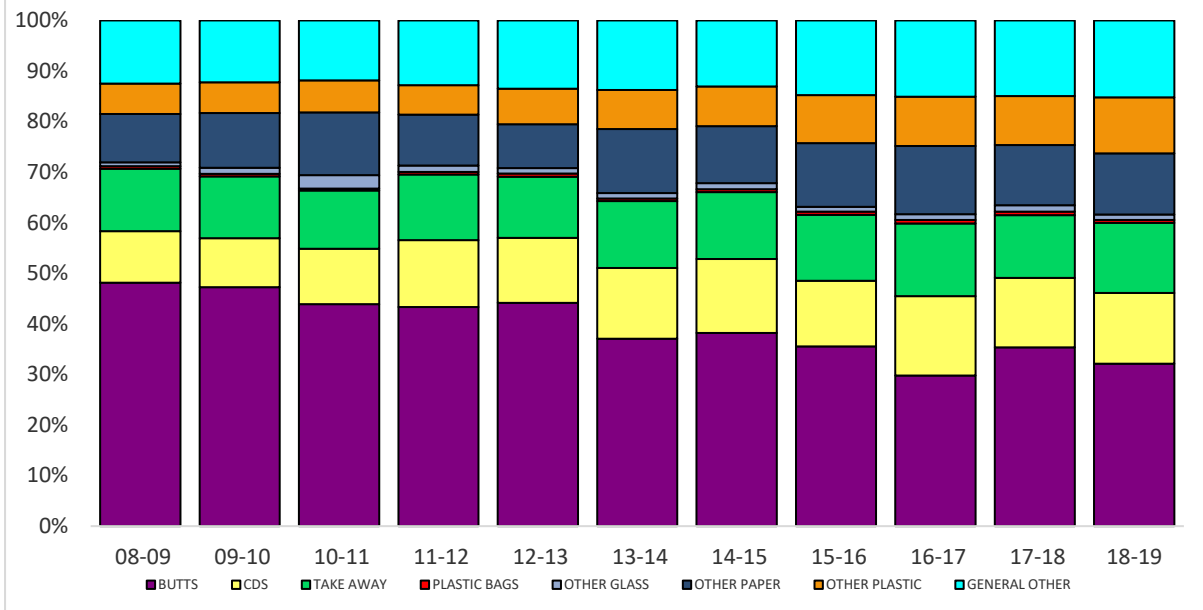
Over the longer term, WA has maintained steadily declining litter levels, driven primarily by reductions in cigarette litter. In the 2018/19 litter monitor a decrease in cigarette litter was the primary reason for the overall decrease in litter from the previous year.





## Western Australia - % Litter Items

Source: National Litter Index - KABNA Analysis



### Volumetric Impacts

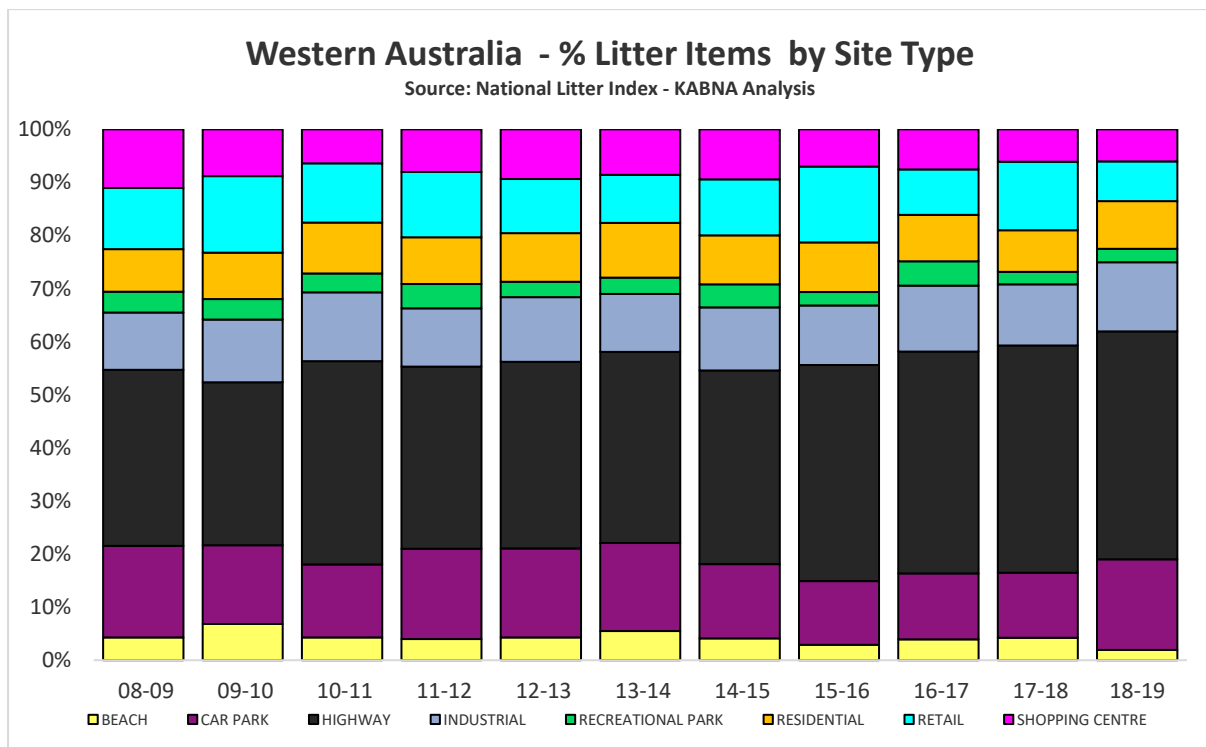
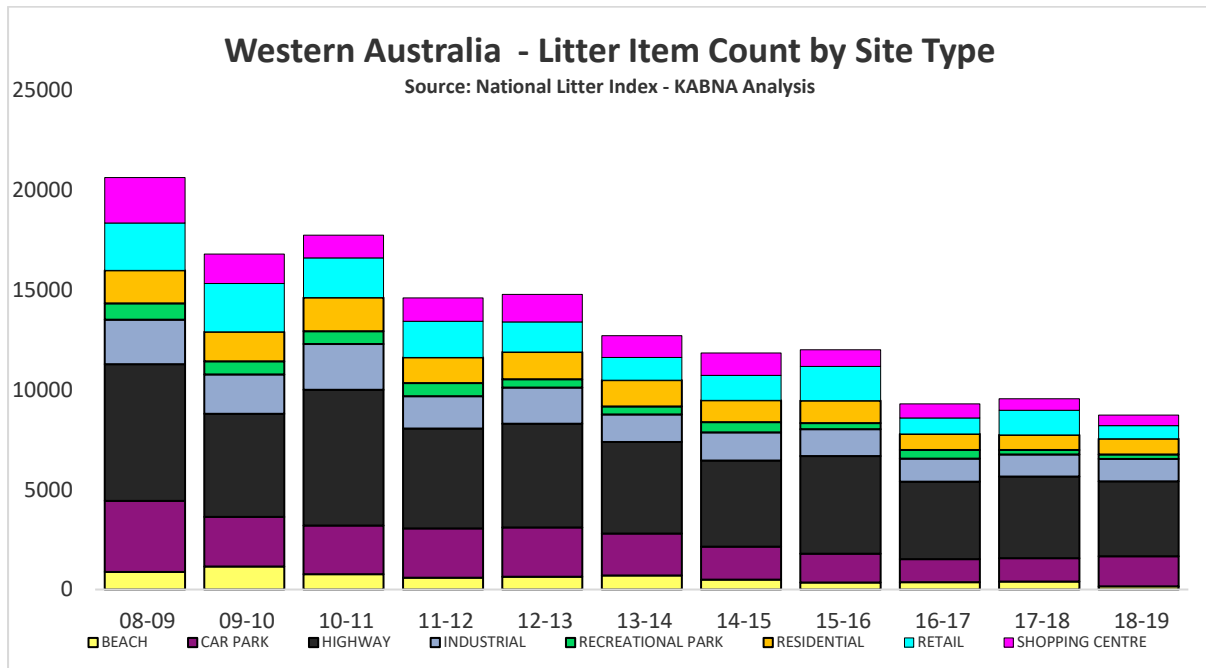
There was a decrease of litter volume of 8.9% in 2018/19. The most significant contributors to the decrease in litter volume recorded was the reduction of plastic industrial containers, plastic domestic containers and plastic soft drink bottles <1 litre.

		Volume - Litres								
WA		Beach	Car Park	Highway	Industrial	Recreational Park	Residential	Retail	Shopping Centre	Total
WA 2018/19	Butts & Packaging	0.006	1.624	8.987	2.667	0.004	1.984	0.476	0.362	16.110
	Beverage Containers	2.327	27.946	576.335	42.298	2.161	13.793	10.040	2.140	677.040
	Takeaway Food & Beverage	2.563	15.818	86.205	20.594	2.432	8.847	5.356	1.476	143.291
	Other Glass	0.020	0.187	1.070	0.147	0.010	0.206	0.108	0.157	1.905
	Other Paper	0.068	0.411	1.624	0.390	0.154	0.372	0.294	0.247	3.559
	Other Plastic	0.033	0.133	0.549	0.188	0.038	0.154	0.061	0.051	1.208
	General Other	0.590	12.033	349.405	17.050	0.438	21.045	5.131	1.207	406.899
	Plastic Bags	0.017	0.172	1.668	0.328	0.017	0.284	0.068	0.095	2.649
	Illegal Dumping			204.000	24.000		36.000	12.000		276.000
	GRAND TOTAL		5.622	58.323	1229.844	107.663	5.254	82.686	33.535	5.734
WA 2017/18	Butts & Packaging	0.569	1.931	12.268	3.317	0.112	0.888	0.640	0.587	20.313
	Beverage Containers	4.795	20.435	647.156	47.352	4.694	23.949	23.966	6.751	779.097
	Takeaway Food & Beverage	2.552	14.356	108.552	10.034	3.661	12.651	10.472	2.300	164.579
	Other Glass	0.039	0.216	1.650	0.167		0.108	0.118	0.049	2.347
	Other Paper	0.155	0.296	1.879	0.423	0.179	0.404	0.304	0.191	3.831
	Other Plastic	0.041	0.108	0.507	0.194	0.046	0.151	0.066	0.049	1.161
	General Other	1.451	10.498	415.165	35.881	4.446	20.839	15.773	6.846	510.899
	Plastic Bags	0.051	0.172	1.953	0.416	0.085	0.554	0.206	0.068	3.505
	Illegal Dumping		24.000	96.000	24.000		24.000	12.000	12.000	192.000
	GRAND TOTAL		9.653	72.012	1285.131	121.783	13.223	83.545	63.546	28.842
% REDUCTION	Butts & Packaging	99.0%	15.9%	26.7%	19.6%	96.4%	-123.4%	25.6%	38.4%	20.7%
	Beverage Containers	51.5%	-36.8%	10.9%	10.7%	54.0%	42.4%	58.1%	68.3%	13.1%
	Takeaway Food & Beverage	-0.5%	-10.2%	20.6%	-105.2%	33.6%	30.1%	48.9%	35.8%	12.9%
	Other Glass	50.0%	13.6%	35.1%	11.8%		-90.9%	8.3%	-220.0%	18.8%
	Other Paper	56.5%	-38.9%	13.6%	7.6%	14.2%	7.9%	3.3%	-29.2%	7.1%
	Other Plastic	20.0%	-22.5%	-8.4%	2.9%	16.4%	-2.5%	7.5%	-3.8%	-4.0%
	General Other	59.3%	-14.6%	15.8%	52.5%	90.2%	-1.0%	67.5%	82.4%	20.4%
	Plastic Bags	66.7%		14.6%	21.1%	80.0%	48.7%	67.1%	-39.5%	24.4%
	Illegal Dumping		100.0%	-112.5%			-50.0%		100.0%	-43.8%
	Grand Total (excluding illegal dumping)	41.8%	-21.5%	13.7%	14.4%	60.3%	21.6%	58.2%	66.0%	15.7%
GRAND TOTAL	41.8%	19.0%	4.3%	11.6%	60.3%	1.0%	47.2%	80.1%	8.9%	

## Littering Location

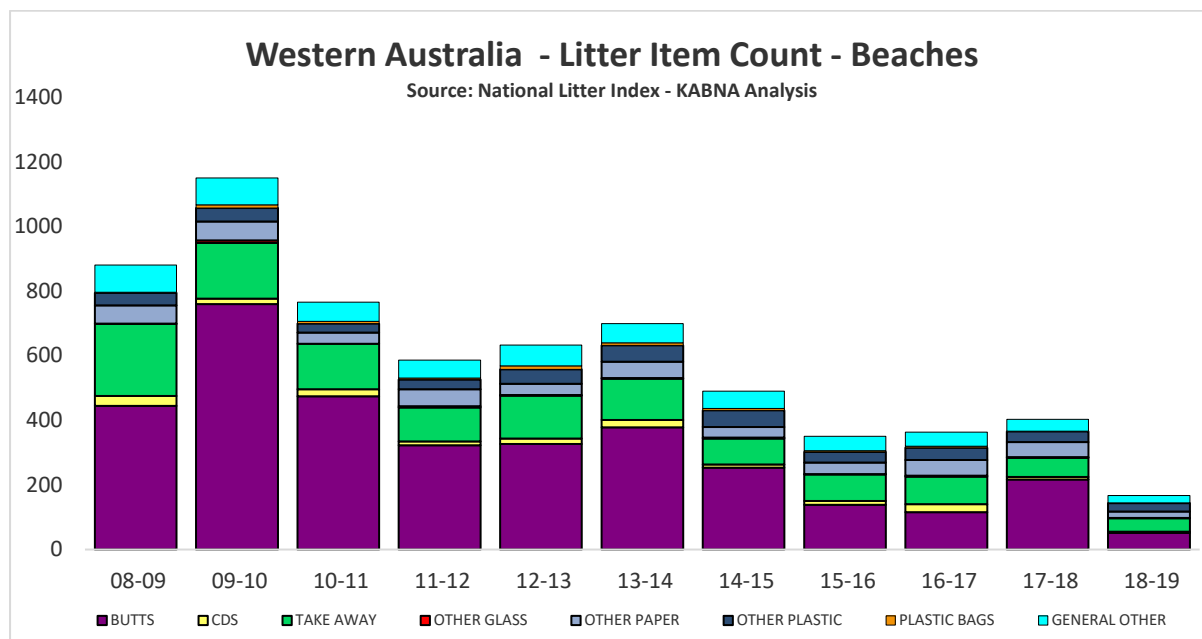
The breakdown of the location of the litter found in Western Australia is contained in the following charts which demonstrate that there has been reduced litter levels over time.

In 2018/19 monitor lower levels of litter were recorded at beaches (-58.6%), retail precincts (-46.9%), shopping centres (-9.3%), major roads highways (-8.2%) and recreational parks (-1.5%), these were offset to some degree by higher levels counted at car parks (+27.7%), residential streets (+4.7%) and industrial precincts (+3.5%).



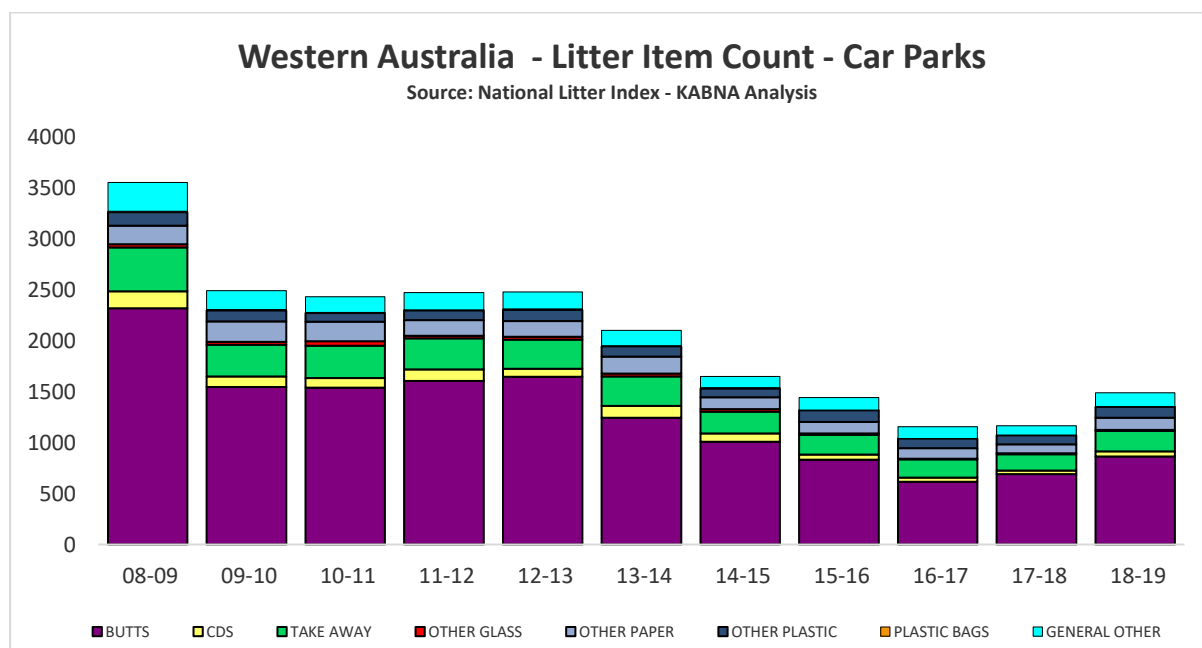
## Beaches

Litter levels at beaches in WA fell by 58.6% in 2018/19 driven primarily by the impact of decreases in cigarette associated litter. Litter levels also decreased across all other litter categories at WA beaches.



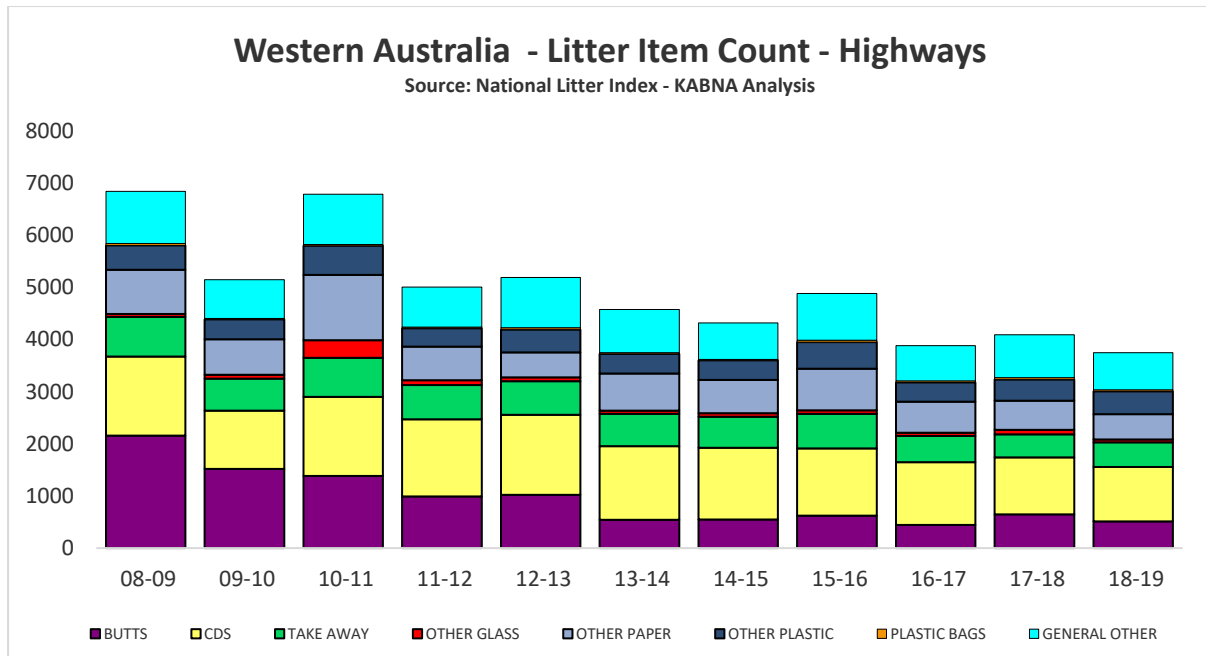
## Car Parks

Litter levels increase by 27.7% at WA car parks, primarily driven by the impact of increases in cigarette associated litter (+24.5%) and to some extent other paper litter (+38.9%) and takeaway packaging (26.7%). There was also an increase across most other litter categories.



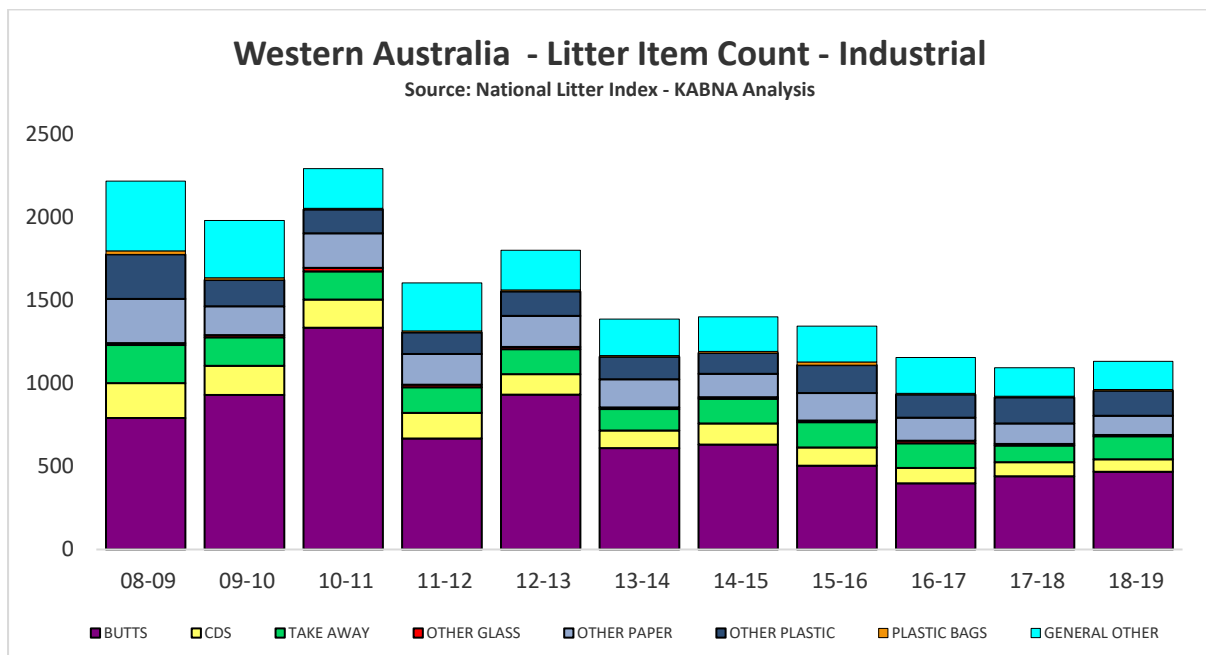
## Major Roads/Highways

Litter levels on Western Australia’s major roads and highways decreased by 8.2% in the 2018/19 litter monitor. The main contributors to the decrease were cigarette litter (-20.1%), other paper (-13.6%), general other litter (-12.8%) and beverage containers (-4.6%). The increases were offset mainly by decreases in other plastic (+8.4%) and takeaway packaging (+6.0%).



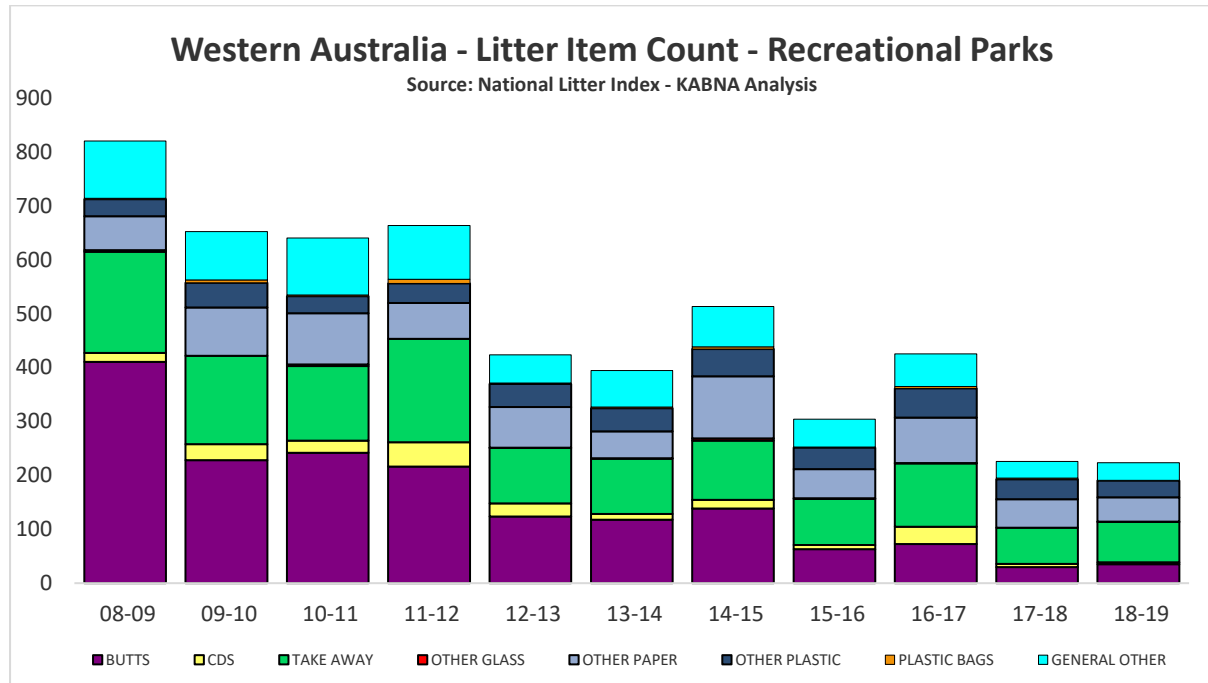
## Industrial

The 2018/19 NLI recorded a marginal 3.5% increase in the litter counted around WA industrial precincts, with takeaway packaging (+38.1%) and cigarette litter (+6.4%) identified as the main categories contributing to the increase. All other categories experienced small decreases in their contribution to litter at industrial sites.



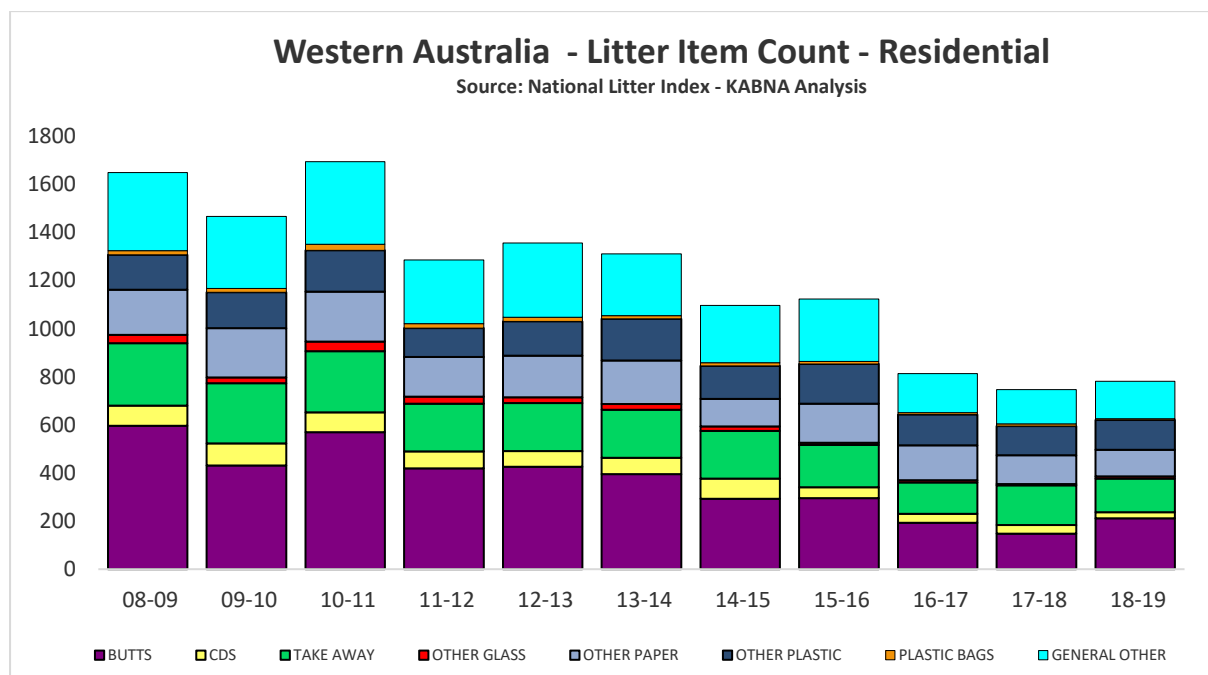
## Recreational Parks

Litter counts in Western Australia’s recreational parks decreased marginally by 1.5% in 2018/19, with other plastic (-16.4%) and other paper (-14.2%) experiencing the largest declines. These falls were offset to some extent by increases in cigarette litter (+16.7%) and takeaway packaging (+11.9%).



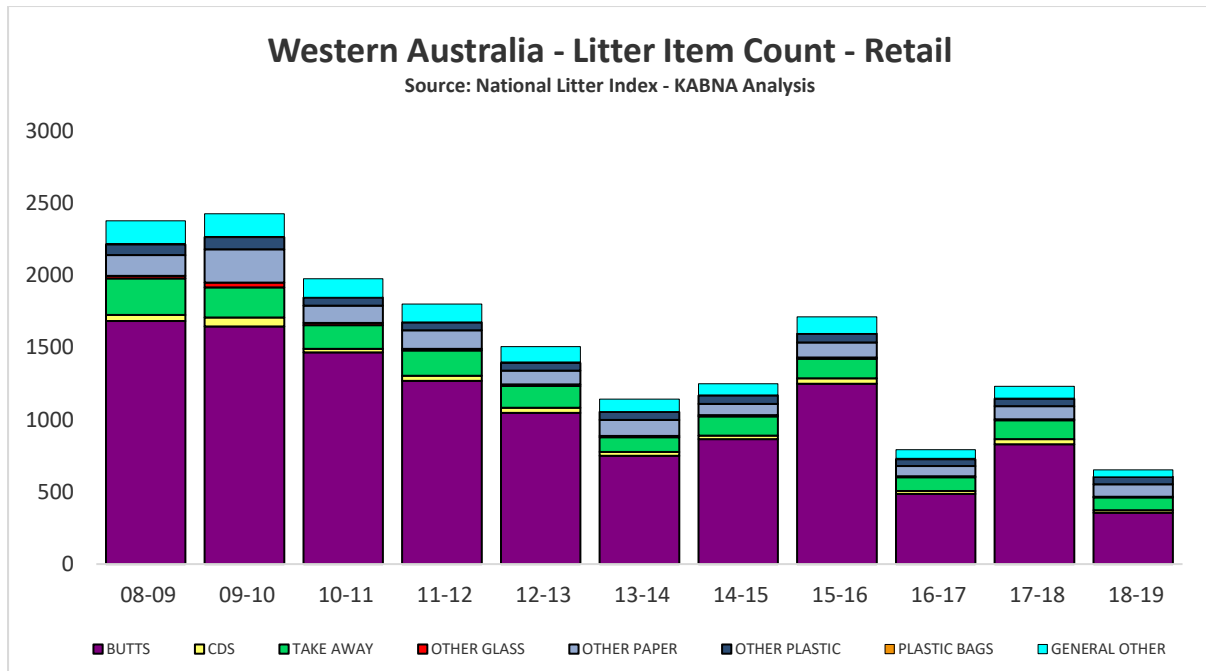
## Residential Streets

The 2018/19 monitor recorded 4.7% more litter on Western Australia’s residential streets, with the largest contribution to the increase from cigarette related litter (+43.2%). The increase was offset to some degree by decreases in beverage containers (-31.0%) and takeaway packaging (-15.7%).



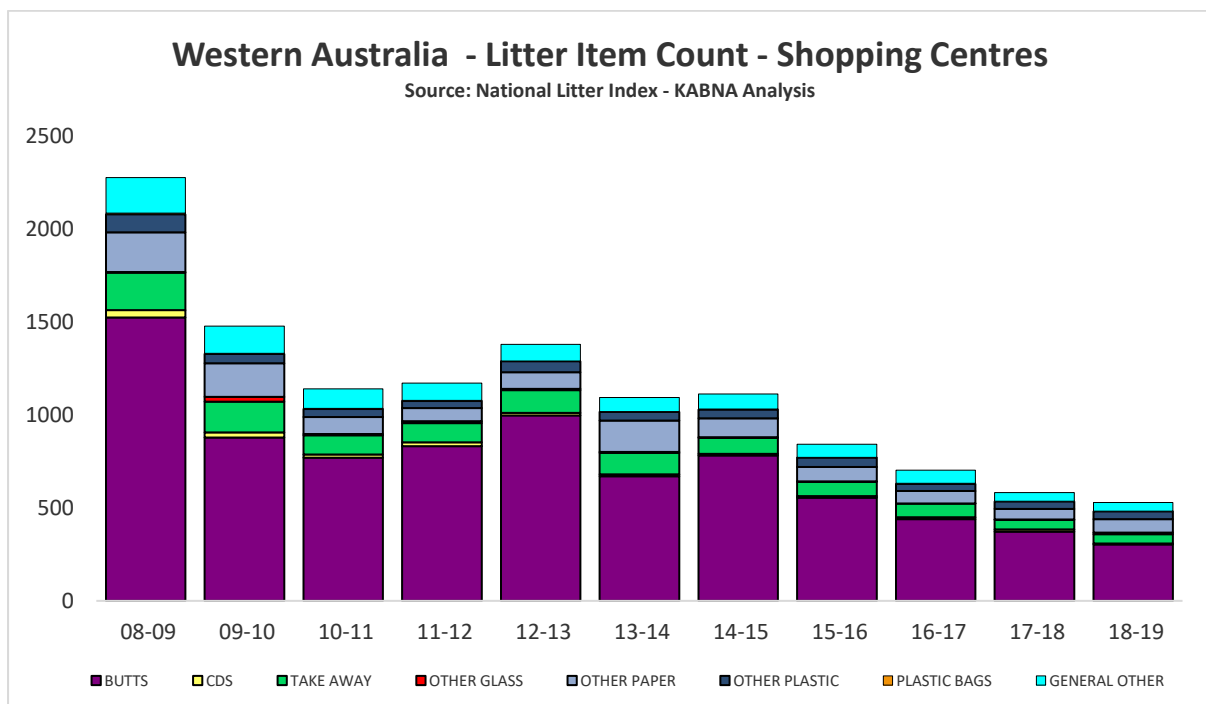
## Retail Precincts

Western Australia’s retail shopping strips experienced a significant decrease in litter in the 2018/19 monitor. The 46.9% decrease was mainly attributed to a decrease in the cigarette litter counted (-57.5%) and there were moderate decreases in takeaway packaging (-46.4%) and general other litter (-40.1%). All litter amongst other litter categories at retail sites also decreased in 2018/19.



## Shopping Centres

Overall litter levels at shopping centres declined in 2018/19 monitor recording a 9.3% decrease in litter counted at these sites in Western Australia. The most notable decline in litter at shopping centres was cigarette litter (-18.3%), this was offset to some degree by an increase in other paper (+29.2%).



### Normalisation for Area Surveyed

The data below has been normalised to the number of items per 1,000m<sup>2</sup> and litres per 1,000m<sup>2</sup> to be able to compare the amounts and volumes of litter by different site types.

The method to normalise the data uses the following calculation:

$$\text{Items or litres per 1,000m}^2 = \frac{\text{the number of items counted}}{\text{divided by the area of sites}} \times \text{multiplied by 1,000}$$

### Litter items per 1,000m<sup>2</sup>

As demonstrated in the tables below, when the area monitored is taken into account, the 2018/19 litter monitor recorded, on average, 37 items per 1000m<sup>2</sup>, a decrease from 40 items per 1000m<sup>2</sup> recorded in the 2017/18 monitor. Industrial precincts continue to have the highest litter loads in Western Australia (76 litter items per 1000m<sup>2</sup>, up from 73 items per 1000m<sup>2</sup>).

WA		Items								
		Beach	Car Park	Highway	Industrial	Recreational Park	Residential	Retail	Shopping Centre	Total
WA 2018/19	Areas Surveyed	8000	34365	87565	14985	26000	35870	13556	15625	235966
	Items counted (excl illegal dumping)	167	1492	3750	1133	224	782	654	529	8729
	Per 1,000 sq m	21	43	43	76	9	22	48	34	37
WA 2017/18	Areas Surveyed	8000	34365	87565	14985	26000	35870	13556	15625	235966
	Items counted excl illegal dumping)	403	1167	4089	1095	227	747	1232	583	9542
	Per 1,000 sq m	50	34	47	73	9	21	91	37	40

### Litter volume per 1,000m<sup>2</sup> (excluding illegal dumping)

In volumetric terms in 2018/19 there was 5.31 litres of litter per 1000m<sup>2</sup> across WA sites, a decrease from 6.30 litres per 1000m<sup>2</sup> estimated in 2017/18. Volumetric litter loads remain the highest on major roads / highways (11.72 litres per 1000m<sup>2</sup>, down from 13.58 litres per 1000m<sup>2</sup> in 2017/18).

WA		Volume - Litres								
		Beach	Car Park	Highway	Industrial	Recreational Park	Residential	Retail	Shopping Centre	Total
WA 2018/19	Areas Surveyed	8000	34365	87565	14985	26000	35870	13556	15625	235966
	Volume (excl illegal dumping)	5 622	58 323	1025 844	83 663	5 254	46 686	21 535	5 734	1252 660
	Per 1,000 sq m	0.70	1.70	11.72	5.58	0.20	1.30	1.59	0.37	5.31
WA 2017/18	Areas Surveyed	8000	34365	87565	14985	26000	35870	13556	15625	235966
	Volume (excl illegal dumping)	9 653	48 012	1189 131	97 783	13 223	59 545	51 546	16 842	1485 733
	Per 1,000 sq m	1.21	1.40	13.58	6.53	0.51	1.66	3.80	1.08	6.30

# Western Australia Litter Monitor Tables

## Detailed Litter Count Tables – Western Australia

WA - NOV 2018 & MAY 19 AVERAGE		Items									Beverage Containers		Takeaway Food	
		Beach	Car Park	Highway	Industrial	Recreational Park	Residential	Retail	Shopping Centre	Total	Beverage container	Items	Takeaway Food	Items
<b>CIGARETTE BUTTS</b>		51	856.5	473.5	456.5	35	203	352.5	302.5	2731				
GLASS	Alcoholic sodas / spirit-based mixers, all sizes		3.5	29	3	0.5	0.5			37	y	37		
	Beer, all colours of glass, <750ml	0.5	9	142	6		1	3.5	0.5	163	y	163		
	Beer, all colours of glass, 750ml+		1.5	7	0.5	0.5	1.5	1		12	y	12		
	Cider/fruit based etc.	0.5	1	4	0.5		0.5			7	y	7		
	Flav.wtr/fruit j. dr./spts dr. (non-carb), <1 litre			0.5						1	y	1		
	Flav.wtr/fruit j. dr./spts dr. (non-carb), 1 litre+				6	0.5				7	y	7		
	Flav. water/soft drink (carbonated) <1 litre				0.5				0.5	1	y	1		
	Flav. water/soft drink (carbonated) 1 litre+										y			
	Fruit juice, < 1 litre													
	Fruit juice, 1 litre+													
	Other glass	1	9.5	54.5	7.5	0.5	10.5	5.5	8	97				
	Plain water (carbonated or non-carb), <1 litre		1.5			0.5				2	y	2		
	Plain water (carbonated or non-carb), 1 litre+				0.5					1	y	1		
	Wine & spirit, all sizes		1	9.5			1			12				
Wine cooler, all sizes				0.5					1	y	1			
<b>Total</b>	<b>2</b>	<b>27</b>	<b>254</b>	<b>18</b>	<b>2</b>	<b>15</b>	<b>11</b>	<b>9</b>	<b>337</b>		<b>229</b>			
<b>ILLEGAL DUMPING</b>				8.5	1		1.5	0.5		12				
METAL	Aerosols - pressure packs			4			0.5			5				
	Alcoholic sodas & spirit-based mixers		2	83	12.5		1	2.5		101	y	101		
	Beer, aluminium, all types, all sizes	0.5	2.5	64	9		1	1	0.5	79	y	79		
	Cider/fruit based etc.		1	2.5						4	y	4		
	Flav. water/soft drink (carbonated), all sizes	1	12	303	18.5	0.5	6.5	3	1.5	346	y	346		
	Flav. water/soft drink (non-carb), all sizes			3	0.5			0.5		4	y	4		
	Foil take away	0.5	3	20	3	1	4	2.5	2	36			y	36
	Food cans (including pet food)		1.5	7.5	3		1			13				
	Industrial cans - all types			1.5						2				
	Metal bottle tops and can pull rings	7	53	30.5	20.5	8.5	13.5	15	13	161			y	161
	Metal pieces	1	9.5	79	24	2	18	8	4.5	146				
	Other foil	2.5	23	37	21	8	22	4	5.5	123				
	<b>Total</b>	<b>13</b>	<b>108</b>	<b>635</b>	<b>112</b>	<b>20</b>	<b>68</b>	<b>37</b>	<b>27</b>	<b>1018</b>		<b>533</b>		<b>197</b>
	MISCELLANEOUS	Clothing & materials	8.5	22	150	30	9.5	18.5	3.5	5	247			
Condoms						0.5	1.5			2				
Construction materials			0.5	10.5	5.5		6	0.5		23				
Disposable nappies			0.5	0.5	0.5					1				
Ice cream sticks			1			1.5	1		1	5			y	5
Other miscellaneous			6.5	13.5	3.5	1	8	5.5	1	39				
Rubber pieces (not tyres)		0.5	9.5	52.5	17.5	3	11	4	3	101				
Syringes				0.5						1				
Tyres & pieces		0.5	0.5	47.5	3		0.5			52				
<b>Total</b>		<b>10</b>	<b>41</b>	<b>275</b>	<b>60</b>	<b>16</b>	<b>47</b>	<b>14</b>	<b>10</b>	<b>470</b>				<b>5</b>
PAPER/PAPERBOARD	Cartons, flavoured milk < 1 litre		0.5	34	2.5					37	y	37		
	Cartons, flavoured milk 1 litre+		0.5	1						2				
	Cartons, fruit juice, < 1 litre		1	3		0.5	1.5			6	y	6		
	Cartons, fruit juice, 1 litre+													
	Cartons, milk, plain (white) all sizes			6.5	1					8				
	Cigarette packets		7	41	12		9	2	1.5	73				
	Cups/take away containers	2.5	14.5	88.5	21	0.5	6	4		137			y	137
	Coffee cups	0.5	10	75.5	5.5		6.5	5	1.5	105				
	Flav. water/fruit j. drink/sports drink, non-carb, <1 litre		0.5	2.5	0.5		0.5	0.5		5	y	5		
	Flav. water / fruit j. drink/ sports drink, (non-carb), 1 litre+			1						1	y	1		
	Ice cream wrappers	1		2.5		0.5	1			5			y	5
	Junk mail / free circulars		4	4.5	2	0.5	11.5	0.5	0.5	24				
	Newspapers & magazines		2	3			1.5	1		8				
	Other paper	20	121.5	480.5	115.5	45.5	110	87	73	1053				
	Packages & boxes	1	5	44.5	7	1.5	8	3	2	72				
	Paper bags	0.5	10	29	3.5	1.5	5	5	2	57				
	Shopper dockets & related shopping paper (eg. lists)		25	110.5	6	1	10	5	17	175				
Tickets, e.g. bus, ATM, vending machine etc.		8				3.5	2	3.5	17					
<b>Total</b>	<b>26</b>	<b>210</b>	<b>928</b>	<b>177</b>	<b>52</b>	<b>174</b>	<b>115</b>	<b>101</b>	<b>1781</b>		<b>49</b>		<b>142</b>	
PLASTIC	6 ring can holders		0.5							1				
	Bags - heavier glossy typically branded carry bags		1	14	2		1.5		0.5	19				
	Bags - supermarket type light weight carry bags	0.5	2.5	13	4.5	0.5	4.5	2	1.5	29				
	Bread bag tags	0.5	0.5	1		2.5	1.5		0.5	7				
	Containers, domestic type			6.5	0.5		1			8				
	Containers, industrial e.g. oil			8.5						9				
	Drink pouches	0.5	1	1			1	0.5		4	y	4		
	Flav. milk, <1 litre		1	42.5	2		0.5	1.5	0.5	48	y	48		
	Flav. milk, 1 litre+													
	Flav.wtr/fruit j. dr. spts dr etc. (non-carb) <1 litre			24	1		2			27	y	27		
	Flav.wtr/fruit j. dr. spts dr etc. (non-carb) 1 litre+		0.5	5.5	0.5					7	y	7		
	Flav. water/soft drink (carbonated) <1 litre		4.5	141.5	2	0.5	4.5	1.5		155	y	155		
	Flav. water/soft drink (carbonated) 1 litre+		1	9	2		0.5			13	y	13		
	Fruit juice <1 litre			7.5			0.5			8	y	8		
	Fruit juice, 1 litre+			0.5	0.5					1				
	Lollipop sticks	5	12.5	1	3	9.5	1.5	3	7	43			y	43
	Other plastic	26	106	439.5	150.5	30.5	123.5	49	41	966				
	Packing tape & straps	8	5.5	36	20.5	1.5	18	4.5	1.5	96				
	Plain water (carbonated or non-carb) <1 litre	1.5	7	108.5	12.5	0.5	1.5	2.5	1	135	y	135		
	Plain water (carbonated or non-carb) 1 litre+			17.5	1					19	y	19		
	Plastic bottle tops	5	25	50.5	25	7	19.5	15.5	10.5	158			y	158
	Sacks - sheeting - other bags			30	2		1			33				
	Snack bags & confectionary wrappers	11	32.5	91.5	24.5	25	53	18	10	266			y	266
	Spoons/ cutlery	2	7	13.5	4.5	1	5.5	7.5	1	42			y	42
	Straws	5	28.5	48	16.5	14.5	19	14	3	149			y	149
	Styrene foam boxes, sheets, etc			16.5	18	0.5	6	0.5	0.5	42				
	Take away & cups		1.5	14.5	52.5	16	6	9	4	105			y	105
White milk, all sizes			4.5	0.5					5					
Wine cask bladders			4.5	0.5					4					
<b>Total</b>	<b>67</b>	<b>251</b>	<b>1186</b>	<b>310</b>	<b>100</b>	<b>276</b>	<b>126</b>	<b>80</b>	<b>2393</b>		<b>414</b>		<b>762</b>	
<b>GRAND TOTAL</b>	<b>167</b>	<b>1492</b>	<b>3759</b>	<b>1134</b>	<b>224</b>	<b>783</b>	<b>654</b>	<b>529</b>	<b>8741</b>		<b>1224</b>		<b>1105</b>	



## Detailed Litter Volume Tables – Western Australia

		Volume - Litres									Beverage Containers		Takeaway Food							
		Beach	Car Park	Highway	Industrial	Recreational Park	Residential	Retail	Shopping Centre	Total	Beverage container	Items	Takeaway Food	Items						
<b>WA - NOV 2018 &amp; MAY 19 AVERAGE</b>																				
<b>CIGARETTE BUTTS</b>		<b>0.005865</b>	<b>0.098498</b>	<b>0.054453</b>	<b>0.052498</b>	<b>0.004025</b>	<b>0.023345</b>	<b>0.040538</b>	<b>0.034788</b>											
<b>GLASS</b>	Alcoholic sodas / spirit-based mixers, all sizes	1.310050	10.854700	1.122900	0.187150	0.187150	0.187150	0.187150	0.187150	0.187150	0.187150									
	Beer, all colours of glass, <750ml	0.231462	4.186317	65.735229	2.777545		0.462924	1.620235	0.231462											
	Beer, all colours of glass, 750ml+		1.360938	6.351044	0.453646	0.453646	0.453646	0.453646	0.453646	0.453646	0.453646									
	Cider/fruit based etc.	0.228927	0.457853	1.831412	0.228927		0.228927													
	Flav. wtr/fruit j. dr/sprts dr. (non-carb.) <1 litre																			
	Flav. wtr/fruit j. dr/sprts dr. (non-carb.) 1 litre+																			
	Flav. water/soft drink (carbonated) <1 litre			2.375044	0.197920															
	Flav. water/soft drink (carbonated) 1 litre+			0.638623					0.638623											
	Fruit juice, < 1 litre																			
	Fruit juice, 1 litre+																			
	Other glass	0.019640	0.186580	1.073080	0.147300	0.009820	0.206220	0.108020	0.157120											
	Plain water (carbonated or non-carb.) <1 litre		0.871603		0.290534															
Plain water (carbonated or non-carb.) 1 litre+			0.529625																	
Wine & spirit., all sizes		0.891400	8.468300				0.891400													
Wine cooler, all sizes			0.187150																	
<b>Total</b>	<b>0.480029</b>	<b>9.244742</b>	<b>98.318651</b>	<b>4.928238</b>	<b>0.941150</b>	<b>3.337559</b>	<b>3.274169</b>	<b>0.388582</b>	<b>0.187150</b>											
<b>ILLEGAL DUMPING</b>				<b>204.000000</b>	<b>24.000000</b>		<b>36.000000</b>	<b>12.000000</b>												
<b>METAL</b>	Aerosols - pressure packs		2.736960				0.342120													
	Alcoholic sodas & spirit-based mixers		0.862800	35.806200	5.392500		0.431400	1.078500												
	Beer, aluminium, all types, all sizes	0.215700	1.078500	27.609600	3.826200		0.431400	0.431400	0.215700											
	Cider/fruit based etc.		0.431400	1.078500																
	Flav. water/soft drink (carbonated), all sizes	0.425535	5.106423	128.937187	7.872402	0.212768	2.765979	1.276606	0.638303											
	Flav. water/soft drink (non-carb), all sizes			1.144800	1.908000			0.190800												
	Foil take away	0.231190	1.387140	9.247600	1.387140	0.462380	1.849520	1.159590	0.924760											
	Food cans (including pet food)		0.895700	3.475500	1.391400		0.463800													
	Industrial cans - all types			6.850600																
	Metal bottle tops and can pull rings	0.028000	0.212000	0.122000	0.082000	0.034000	0.054000	0.060000	0.052000											
	Metal pieces	0.010600	0.100700	0.837400	0.254400	0.021200	0.190800	0.084800	0.047700											
	Other foil	0.003900	0.035800	0.057720	0.032760	0.012480	0.034320	0.006240	0.008580											
<b>Total</b>	<b>0.914925</b>	<b>9.910543</b>	<b>217.911527</b>	<b>20.486002</b>	<b>0.742828</b>	<b>6.563339</b>	<b>4.284296</b>	<b>1.887043</b>	<b>262.700503</b>											
<b>MISCELLANEOUS</b>																				
Clothing & materials	0.130050	0.336600	2.295000	0.459000	0.145350	0.283050	0.053550	0.076500												
Condoms					0.000160	0.000480														
Construction materials		0.180000	3.780000	1.980000		2.160000	0.180000													
Disposable nappies		0.562500		0.562500																
Ice cream sticks		0.000920				0.001380	0.000920		0.000920											
Other miscellaneous	0.087750	0.182250	0.047250	0.013500	0.108000	0.074250	0.013500													
Rubber pieces (not tyres)	0.000082	0.001563	0.008636	0.002879	0.000494	0.001810	0.000658	0.000494												
Syringes			0.001130																	
Tyres & pieces	0.112500	0.112500	10.687500	0.675000		0.112500														
<b>Total</b>	<b>0.242632</b>	<b>1.281833</b>	<b>16.954516</b>	<b>3.726629</b>	<b>0.160884</b>	<b>2.666760</b>	<b>0.308458</b>	<b>0.091414</b>	<b>25.431325</b>											
<b>PAPER/PAPERBOARD</b>	Cartons, flavoured milk < 1 litre		0.336240	22.864320	1.681200															
	Cartons, flavoured milk 1 litre+		0.506330	1.012660																
	Cartons, fruit juice, < 1 litre		0.624750	1.874250			0.312375	0.937125												
	Cartons, fruit juice, 1 litre+																			
	Cartons, milk, plain (white) all sizes			6.582290	1.012660															
	Cigarette packets		1.525090	8.932670	2.614440		1.960380	0.435740	0.326805											
	Cups/latte away containers	1.822375	10.569775	64.512075	15.307950	0.364475	4.373700	2.915800												
	Coffee cups	0.245013	4.900256	36.968934	2.695141		3.185167	2.450128	0.735038											
	Flav. water/fruit j. drink/sports drink, non-carb. <1 litre		0.151200	0.756000	0.151200		0.151200	0.151200												
	Flav. water / fruit j. drink/ sports drink, (non-carb), 1 litre+			2.070000																
	Ice cream wrappers	0.002400		0.006000		0.001200	0.002400													
	Junk mail / free circulars		0.896000	0.783000	0.348000	0.087000	2.001000	0.087000	0.087000											
Newspapers & magazines		2.360000	3.540000			1.770000	1.800000													
Other paper	0.067600	0.410670	1.624090	0.390390	0.153790	0.371800	0.294060	0.246740												
Packages & boxes	0.080000	0.400000	3.560000	0.560000	0.120000	0.640000	0.240000	0.160000												
Paper bags	0.005290	0.105800	0.306820	0.037030	0.015870	0.052900	0.052900	0.021160												
Shopper dockets & related shopping paper (eg. lists)	0.050750	0.224315	0.012180	0.002030		0.020300	0.010150	0.034510												
Tickets, e.g. bus, ATM, vending machine etc.		0.007040				0.003080	0.001760	0.003080												
<b>Total</b>	<b>2.222678</b>	<b>22.643901</b>	<b>155.645424</b>	<b>24.810191</b>	<b>1.056740</b>	<b>15.469502</b>	<b>7.818738</b>	<b>1.614333</b>	<b>231.281508</b>											
<b>PLASTIC</b>	6 ring can holders		0.000750																	
	Bags - heavier glossy typically branded carry bags		0.087600	1.226400	0.175200		0.131400		0.043800											
	Bags - supermarket type light weight carry bags	0.016970	0.084850	0.441220	0.152730	0.016970	0.152730	0.067880	0.050910											
	Bread bag tags	0.000115	0.000115	0.000230		0.000575	0.000345		0.000115											
	Containers, domestic type			54.106000	4.162000		8.324000													
	Containers, industrial e.g. oil			190.893000																
	Drink pouches	0.043125	0.086250	0.086250			0.086250	0.043125												
	Flav. milk, <1 litre		0.532700	22.639750	1.065400		0.266350	0.799050	0.266350											
	Flav. milk, 1 litre+																			
	Flav. wtr/fruit j. dr. sprts dr etc. (non-carb) <1 litre			17.702875	0.737620		1.475240													
	Flav. wtr/fruit j. dr. sprts dr etc. (non-carb) 1 litre+		0.600551	6.606066	0.600551															
	Flav. water/soft drink (carbonated) <1 litre		2.799495	88.028565	1.244220	0.311055	2.799495	0.933165												
	Flav. water/soft drink (carbonated) 1 litre+		1.654000	14.886000	3.308000		0.827000													
	Fruit juice <1 litre			3.000349			0.200023													
	Fruit juice, 1 litre+			1.068345	1.068345															
	Lollipop sticks	0.002650	0.006625	0.006530	0.001590	0.005035	0.000795	0.001590	0.003710											
	Other plastic	0.032500	0.132500	0.549375	0.160125	0.038125	0.154375	0.061250	0.051250											
	Packing tape & straps	0.002160	0.001485	0.009720	0.005535	0.000405	0.004860	0.001215	0.000405											
	Plain water (carbonated or non-carb) <1 litre	1.161850	5.515300	85.487150	9.848750	0.393950	1.181850	1.969750	0.797900											
	Plain water (carbonated or non-carb) 1 litre+			26.977475	1.541570															
	Plastic bottle tops		0.040025	0.200125	0.404253	0.200125	0.056035	0.156098	0.124078	0.084053										
	Sacks - sheeting - other bags			0.009450	0.006630		0.000315													
	Snack bags & confectionary wrappers	0.086130	0.254475	0.716445	0.181835	0.195750	0.414													