

2022 Auckland Council Litter Audit

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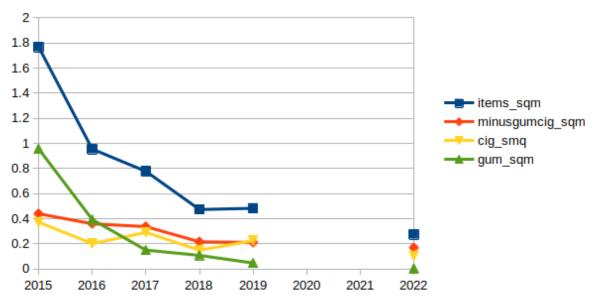
Executive Summary

This report explores the litter counts conducted across the Auckland region over the summer and autumn of 2021-22. Because there was a hiatus in counting due to covid, comparisons will be against data from the 2019 counts and from the comprehensive CCAT report prepared for Auckland Council in 2018.

The gradual downward trend in littering across Auckland continues; driven in large part by reductions in the littering of cigarette butts and gum.

The littering of cigarette butts has fallen by half since 2019, and gum by a factor of 10. This is hugely significant, as historically over half of all litter counted was one of these two items. How much of this is purely an effect of covid will be seen over time, but it does rhyme with the historical trend in Auckland and elsewhere around the country, so there is reason to be cautiously optimistic that the reductions will be maintained.

The following chart illustrates the impact of the reduction of smoking and chewing on litter counts over time. The red line is all items minus both gum and cigarette butts, showing positive progress is occurring independently of these two demographic shifts.



Litter Items per sqm in Auckland

It is unlikely that gum chewers have seen the light over the last seven years and have begun to dispose of their refuse properly. Unlike other litter items, gum tends to accumulate at survey sites. The lack of accumulation over the last couple of years has undoubtedly been influenced by changes in behaviour associated with the pandemic. A new player on the scene is the disposable mask; another shift that is the result of the pandemic. Masks are the new "plastic bag". Ubiquitous and easily wind blown, they are also top of mind during the pandemic so are more noticeable than other litter items that are far more common. This makes them a lightening rod for public attention beyond what is probably warranted.

There is no definitive social science to suggest that any particular demographic litters any more or less than any other, except in very narrowly defined situations. Our observations concur. We observe all ages, genders and races in all manner of economically diverse neighbourhoods engaging in littering behaviour.

Who we are

Be A Tidy Kiwi (BATK) has been New Zealand's iconic litter mascot since the late 1960's.

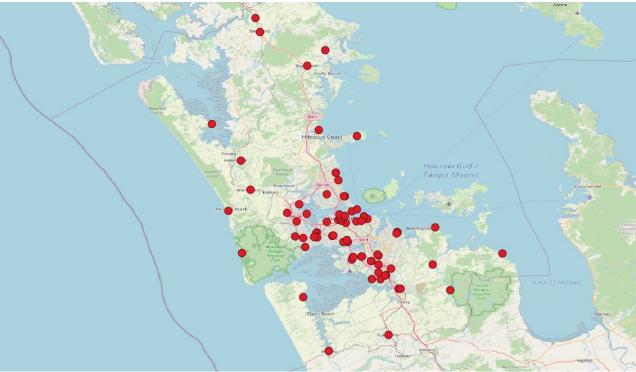
Much of what we see in public places finds its way to our beaches. Sustainable Coastlines reports that 77% of what they count on beaches is single-use plastic. In 2017 we switched to the United Nations Environment Programme's (UNEP) Marine Litter Categories for our litter counts, to facilitate direct comparisons with counts from other organisations like Sustainable Coastlines and NIWA. BATK continues to collaborate with these organisations to maintain and improve upon this shared litter methodology.

Where we survey

The Be A Tidy Kiwi programme chose Auckland for regular assessment because the greater Auckland region encompasses rural, suburban and urban settings and a third of New Zealand's population.

All survey locations are highly trafficked public places that enjoy regular cleaning via council contracts. (high-flux, high traffic) This enables the interviewing of amenity users as well as the observation of littering behaviour – both positive and negative disposals.

The sample frame is constantly being updated to respond to requests from stakeholders and to help balance out the location types. Currently, 79 locations are being monitored in a longitudinal fashion.



BATK Litter monitoring sites in the Auckland region.

Where the littering happens

Before we explore what gets littered, a quick summary of where the littering happens is appropriate. Survey locations are highly trafficked public places, and much of what gets counted from beach cleanups and the like originated in public places. This table reflects the general downward trend in littering, with only one site type bucking the trend.

Site Type	2019 items/sqm	2022 items/sqm
Park	0.33	0.25
Beach Park	0.29	0.27
Sports Facility	0.67	0.20
Shops	0.64	0.33
Mall	0.16	0.24
Transition commercial	1.02	0.30
Transition residential	0.36	0.54
Rail Easement	0.80	0.39
Transport	1.01	0.33
	0.10	0.10
Public Bldg	0.18	0.16
Landmark	0.49	0.27
Waterfront Precinct	0.05	0.05

From this chart, it is clear that Aucklanders value their 'clean green' spaces, such as Beach Parks, Parks and Sports Facilities; all of which are places that have environmental features, playgrounds and other facilities where children play.

Aucklanders are most likely to litter in Transition locations where they spend very little time just passing through, or Transport related areas where they are forced to linger longer than they would like.

The Waterfront Precincts are manicured public places, where low litter counts mask the littering behaviour observed there. Malls were the site type bucking the trend, but not by much. In our case the term "Mall" is in the Australian sense of the word as opposed to the "Westfield Mall" American sense of the word. We do not count inside enclosed American style malls.

What gets littered

Historically, public places in Auckland were dominated by two types of litter; cigarette butts and gum, representing over half of everything we counted. Covid-19 has changed all this.

In 2022, gum only represents 1.22% of what we counted – a massive drop compared to 2019 and a rapid acceleration of gum's long term downward trend. This exaggerates the percentage of cigarette butts, which have reduced by half since 2019. See Appendix B for a side by side with the 2018 report.

	Bottle caps & lids: 2.24
	Bottles < 2 L: 0.24
	Cigarettes, butts & filters: 37.30
Plastic%:: 59.49	
	Drink package rings, six-pack rings, ring carriers: 0.24 Food containers (fast food, cups, lunch boxes & similar): 1.27
	Knives, forks, spoons, straws, stirrers, (cutlery): 2.24
	Other Plastic (specify): 0.10 Plastic bags (opaque & clear): 0.20
	Plastic bits (unidentifiable hard plastics): 2.68
	Plastic film wrappers (candy, straw wrappers, etc): 11.80
	Desire sellets 0.05
	Resin pellets: 0.05 Sheeting (tarpaulin or other woven plastic bags, palette wrap): 0.05 Strapping: 0.59
	Toys & party poppers: 0.49 Cups & food packs: 0.15
Foam%:: 0.83	Foam (insulation & packaging): 0.05
100111/011 0105	Foam Sponge: 0.63 Clothing, shoes, hats & towels: 0.20
Cloth%:: 0.98	Other Cloth (including rags): 0.10 Rope & string: 0.68 Bottles & jars: 0.68
Glass, Ceramic%:: 4.19	
	Glass or ceramic fragments: 3.51 Aluminium drink cans: 0.39
Metal%:: 10.15	Bottle caps, lids & pull tabs: 5.46
	Foil wrappers: 2.93
	Fragments: 0.59 Other Metal (specify): 0.05
	Wire, wire mesh & barbed wire: 0.73
	Cardboard boxes & fragments: 0.78 Cups, food trays, food wrappers, cigarette packs, drink containers: 0.78
Paper, Cardboard%:: 14.4	Paper (including newspapers & magazines): 12.82
	Tubes for fireworks: 0.05
	Balloons, balls & toys: 0.73
Rubber%:: 2.35	Footwear (jandals, flip-flops): 0.05 Inner-tubes and rubber sheet: 0.15 Other Rubber (specify): 0.15
Wood9/w 2 20	Rubber bands: 1.27 Ice-cream sticks, chip forks, chopsticks & toothpicks: 2.00
Wood%:: 2.20	Other Wood (specify): 0.15 Processed timber and pallet crates: 0.05
	Chewing gum: 1.22 Faeces: 0.10
Other%:: 5.41	Food goo: 3.56
	Sanitary (cotton buds, tampon applicators, toothbrushes): 0.29
	UN-Sanitary (used nappies, used tampons, used bandages, bloody): 0.24

Percentage of litter by UNEP category, 2021/22.

Because of the historical dominance of cigarette butts and gum, it is worth removing them from the counts in order to let the other littered items come through in the numbers. Below are the 2022 counts without cigarette butts and gum. See Appendix A for a side by side from the 2018 report.

	Bottle caps & lids: 3.65
	Bottles < 2 L: 0.40 Drink package rings, six-pack rings, ring carriers: 0.40 Food containers (fast food, cups, lunch boxes & similar): 2.06
	Knives, forks, spoons, straws, stirrers, (cutlery): 3.65
	Other Plastic (specify): 0.16
	Plastic bags (opaque & clear): 0.32 Plastic bits (unidentifiable hard plastics): 4.36
Plastic%:: 36.09	riastic bits (unidentifiable fiard plastics). 4.50
	Plastic film wrappers (candy, straw wrappers, etc): 19.19
	Resin pellets: 0.08
	Sheeting (tarpaulin or other woven plastic bags, palette wrap): 0.08 Strapping: 0.95
Foam%:: 1.35	Toys & party poppers: 0.79 Cups & food packs: 0.24 Foam (insulation & packaging): 0.08
	Foam Sponge: 1.03 _ Clothing, shoes, hats & towels: 0.32
Cloth%:: 1.59	Other Cloth (including rags): 0.16 Rope & string: 1.11
	Bottles & jars: 1.11
Glass, Ceramic%:: 6.82	Glass or ceramic fragments: 5.71
-	Aluminium drink cans: 0.63
Metal%:: 16.49	Bottle caps, lids & pull tabs: 8.88
	Foil wrappers: 4.76
	Fragments: 0.95
	Other Metal (specify): 0.08 Wire, wire mesh & barbed wire: 1.19
	Cardboard boxes & fragments: 1.27
Cup	s, food trays, food wrappers, cigarette packs, drink containers: 1.27 $_$
Paper, Cardboard%:: 23.48	
	Paper (including newspapers & magazines): 20.86
	Tubes for fireworks: 0.08
	Balloons, balls & toys: 1.19 Footwear (jandals, flip-flops): 0.08
Rubber%:: 3.81	Inner-tubes and rubber sheet: 0.24 Other Rubber (specify): 0.24
	Rubber bands: 2.06
Wood%:: 3.57	Ice-cream sticks, chip forks, chopsticks & toothpicks: 3.25
	Other Wood (specify): 0.24 Processed timber and pallet crates: 0.08 Faeces: 0.16
Other%:: 6.83	Food goo: 5.79
LIN-Sa	Sanitary (cotton buds, tampon applicators, toothbrushes): 0.48 nitary (used napples, used tampons, used bandages, bloody): 0.40

UN-Sanitary (used nappies, used tampons, used bandages, bloody): 0.40

Percentages of litter by UNEP category, 2021/22.

Plastic now dominates Auckland's litter statistics at nearly 60%, with single use plastics topping the lists. The vast majority of Auckland's litter is related to takeaways.

Masks do feature in the litter counts, but not in any significant numbers. Like plastic bags, they are often wind-blown out of our survey areas or have been picked up by council contractors as part of their scheduled litter picking duties. They appear in the charts above in the Other > Sanitary category.

Masks could be leveraged as part of a litter campaign, (see the recommendations below), because they have a high yuck factor and resonate with the public. However, they are a pandemic specific issue which is likely to resolve itself in the long term.

Recommendations

Gum

Gum has collapsed from being a quarter of all littered items to just over 1%.

Recommendation: Do nothing. Any investment in combatting gum would be premature, and should only be considered if gum rebounds in a post covid world.

Cigarette butts

Cigarette butts are littered everywhere, even next to bins without ashtrays. Our data shows no meaningful correlation between butt littering and ashtrays on rubbish bins. However, butts are the #1 brimming item, by a large factor. Smokers are trying to do the right thing, and making ahstray-less bins look filthy in the process.

Recommendation: Consider making ashtrays a standard feature on all rubbish bins. This does not promote smoking, but does promote proper disposal behaviour from those who do smoke.

Masks

Masks are the new 'plastic bag'. Worse, they are a health hazard when littered. For all practical purposes they are the latest addition to the single-use plastic category.

Recommendation: If you are going to promote a Be A Tidy Kiwi prodisposal message, make it about masks and reap the public health benefits as well as the litter reduction benefits. The yuck factor of used masks will make any campaign resonate.

Pack-in pack-out

Pack-in pack-out signage is non-existent as far as the public is concerned. The tiny emoji of a person putting a bag into the boot of a car, that itself is rarely used, is unknown to the public and invisible when it is used. When pointed out, 100% of respondents think that it means that people should lock their valuables in the boot of their car.



Recommendation: Develop a larger and consistent set of signs for use in regional parks and other pack-in pack-out areas. Use the BATK logo as part of the message if useful.

Replacing bins

Replacing bins like for like across Auckland has been mooted to manage expectations around bin types. There are dozens of bin designs in various states of decrepitude across Auckland, and many of them do not prevent bird/animal strike or keep out the weather, contributing to litter.

Recommendation: Consider developing a menu of bin designs for local boards and streetscape designers to choose from that incorporate the WasteMINZ/LGNZ agreed colours and wording. Designs should also be robust for Auckland's marine



environment and use the same key/locking systems. Designs should be contractor and H&S friendly.

Bins in Parks

Our CCAT results (see the 2018 report!) show that in our city parks, street furniture is getting the attention it needs, but binfrastructure is not.

Recommendation: Consider upgrading the bins in our parks, particularly beach parks. This does not imply *more* bins, only improvements to the quality and design. As per the previous recommendation, particular attention should be paid to the effects of the marine environment.

Be A Tidy Kiwi

For almost three generations, Be A Tidy Kiwi has been used to educate and indicate appropriate disposal behaviour across New Zealand. As an almost invisible trigger for good behaviour, it can be leveraged once again – being inconspicuous by being ubiquitous.

Recommendation: The first and very successful BATK campaign saw the BATK logo installed on all rubbish bins nationwide, as well as signage in parks and on rural roads. This not so subtle reminder reduced littering behaviour significantly in the early '70s and again in the mid '80s. It could do so again.

Appendix A (without gum/cigs)

	Bottle caps & lids: 1.96 = Bottles < 2 L: 0.06		Bottle caps & lids: 3.65
			Bottles < 2 L: 0.40
	Knives, forks, spoons, straws, stirrers, (cutlery): 3.52		Drink package rings, six-pack rings, ring carriers: 0.40
	Drink package rings, six-pack rings, ring carriers: 0.11		Food containers (fast food, cups, lunch boxes & similar): 2.06
	Food containers (fast food, cups, lunch boxes & similar): 0.95 – Plastic bags (opaque & clear): 0.22		Knives, forks, spoons, straws, stirrers, (cutlery): 3.65
PL 11 91 - 20 40	Diactic film wrappers (candy, straw wrappers, etc), 15, 29		Other Plastic (specify): 0.16 Plastic bags (opaque & clear): 0.32
Plastic%:: 28.42	Plastic film wrappers (candy, straw wrappers, etc): 15.38		Plastic bits (unidentifiable hard plastics): 4.36
	Toys & party poppers: 0.84	Plastic%:: 36.09	
	Sheeting (tarpaulin or other woven plastic bags, palette wrap): 0.17 Rope: 0.17		
	Strapping: 0.34 Resin pellets: 0.06 Other Plastic (specify): 0.11		Plastic film wrappers (candy, straw wrappers, etc): 19.19
	Plastic bits (unidentifiable hard plastics): 4.53		Resin pellets: 0.08
	Foam Sponge: 0.11		Sheeting (tarpaulin or other woven plastic bags, palette wrap): 0.08
= Foam%:: 1.68	Cups & food packs: 1.29		Strapping: 0.95
Foam%:: 1.68	Foam (insulation & packaging): 0.28		Toys & party poppers: 0.79
	Clothing, shoes, hats & towels: 0.34		Cups & food packs: 0.24 Foam (insulation & packaging): 0.08
	Canvas, sailcloth & sacking (hessian): 0.17	Foam%:: 1.35	Foam Sponge: 1.03
Cloth%:: 1.24	Rope & string: 0.45		Clothing, shoes, hats & towels: 0.32 Other Cloth (including rags): 0.16
	Other Cloth (including rags): 0.28	Cloth%:: 1.59	
	Bottles & jars: 0.28	Ciotinini 1.55	Rope & string: 1.11
			Bottles & jars: 1.11
Glass, Ceramic%:: 8.22	Glass or ceramic fragments: 7.94	Glass, Ceramic%:: 6.82	Glass or ceramic fragments: 5.71
	Bottle caps, lids & pull tabs: 5.65		Aluminium drink cans: 0.63
	Aluminium drink cans: 0.22		
	Other cans (< 4 L): 0.06		Bottle caps, lids & pull tabs: 8.88
Metal%:: 20.92			
Hetain. 20.32	Foil wrappers: 13.59	Metal%:: 16.49	Foil wrappers: 4.76
	Fragments: 1.06		Fragments: 0.95
	Wire, wire mesh & barbed wire: 0.34		Other Metal (specify): 0.08
	Wile, wile mesh & babed wile. 0.54		Wire, wire mesh & barbed wire: 1.19
			Cardboard boxes & fragments: 1.27
		Cu	ps, food trays, food wrappers, cigarette packs, drink containers: 1.27
Paper, Cardboard%:: 27.02	Paper (including newspapers & magazines): 25.45	Cu	ps, food drugs, food whappens, eightence packs, drink containers. 1.27
Cu	Cardboard boxes & fragments: 0.56 ps, food trays, food wrappers, cigarette packs, drink containers: 0.34	Paper, Cardboard%:: 23.48	Paper (including newspapers & magazines): 20.86
	Tubes for fireworks: 0.67		
	Balloons, balls & toys: 1.51 -		
Rubber%:: 2.47	Footwear (jandals, flip-flops): 0.11		
	Rubber bands: 0.73		Tubes for fireworks: 0.08
	Condoms: 0.06		Balloons, balls & toys: 1.19
	Other Rubber (specify): 0.06		Footwear (jandals, flip-flops): 0.08 Inner-tubes and rubber sheet: 0.24
	Ice-cream sticks, chip forks, chopsticks & toothpicks: 2.01	Rubber%:: 3.81	Inner-tubes and rubber sheet: 0.24 Other Rubber (specify): 0.24
Wood%:: 2.57	Processed timber and pallet crates: 0.11		Rubber bands: 2.06
	Matches & fireworks: 0.45		
	Sanitary (cotton buds, tampon applicators, toothbrushes): 0.11	Wood%:: 3.57	Ice-cream sticks, chip forks, chopsticks & toothpicks: 3.25
LIN-S	anitary (used nappies, used tampons, used bandages, bloody): 0.50 –		Other Wood (specify): 0.24
	Faeces: 0.28		Processed timber and pallet crates: 0.08 Faeces: 0.16
Other%:: 7.50			
Other%:: 7.50	Food goo: 6.49	Other%:: 6.83	Food goo: 5.79
	Appliances & Electronics: 0.06		Sanitary (cotton buds, tampon applicators, toothbrushes): 0.48
	Other Other (specify): 0.06	LIN-S	Sanitary (used nappies, used tampons, used bandages, bloody): 0.40
Percentage of	litter by UNEP category 2017/18.		
6		Percentage of	<i>litter by UNEP category 2021/22.</i>

Appendix B (all items)

	Bottle caps & lids: 0.91 – Bottles < 2 L: 0.03 –		Bottle caps & lids: 2.24 Bottles < 2 L: 0.24
	Knives, forks, spoons, straws, stirrers, (cutlery): 1.64 Drink package rings, six-pack rings, ring carriers: 0.05 Food containers (fast food, cups, lunch boxes & similar): 0.44 Plastic bags (opaque & clear): 0.10		
	Plastic film wrappers (candy, straw wrappers, etc): 7.18		
	Toys & party poppers: 0.39		Cigarettes, butts & filters: 37.30
Plastic%:: 40.27	Cigarettes, butts & filters: 27.02	Plastic%:: 59.49	
	Sheeting (tarpaulin or other woven plastic bags, palette wrap): 0.08 Rope: 0.08		Drink package rings, six-pack rings, ring carriers: 0.24 Food containers (fast food, cups, lunch boxes & similar): 1.27
	Strapping: 0.16		Knives, forks, spoons, straws, stirrers, (cutlery): 2.24
	Resin pellets: 0.03 Other Plastic (specify): 0.05		Other Plastic (specify): 0.10 Plastic bags (opaque & clear): 0.20
	Plastic bits (unidentifiable hard plastics): 2.11		Plastic bits (unidentifiable hard plastics): 2.68
	Foam Sponge: 0.05		
— Foam%:: 0.78	Cups & food packs: 0.60 Foam (insulation & packaging): 0.13 Clothing, shoes, hats & towels: 0.16		Plastic film wrappers (candy, straw wrappers, etc): 11.80
- Cloth%:: 0.58	Canvas, sailcloth & sacking (hessian): 0.08 Rope & string: 0.21	Sh	Resin pellets: 0.05 eeting (tarpaulin or other woven plastic bags, palette wrap): 0.05
	Other Cloth (including rags): 0.13 Bottles & jars: 0.13		Strapping: 0.59 Toys & party poppers: 0.49 Cups & food packs: 0.15
Glass, Ceramic%:: 3.84	Glass or ceramic fragments: 3.71	_ Foam%:: 0.83	Foam (insulation & packaging): 0.05 Foam Sponge: 0.63
	Bottle caps, lids & pull tabs: 2.64		Clothing, shoes, hats & towels: 0.20
Metal%:: 9.77	Aluminium drink cans: 0.10 Other cans (< 4 L): 0.03	Cloth%:: 0.98	Other Cloth (including rags): 0.10 Rope & string: 0.68 Bottles & jars: 0.68
	Foil wrappers: 6.34	Glass, Ceramic%:: 4.19	Glass or ceramic fragments: 3.51
	Fragments: 0.50 —		Aluminium drink cans: 0.39
	Wire, wire mesh & barbed wire: 0.16		Bottle caps, lids & pull tabs: 5.46
Paper, Cardboard%:: 12	Paper (including newspapers & magazines): 11.88	Metal%:: 10.15	Foil wrappers: 2.93
	Cardboard boxes & fragments: 0.26		Fragments: 0.59 Other Metal (specify): 0.05
	Cups, food trays, food wrappers, cigarette packs, drink containers: 0.16 Tubes for fireworks: 0.31 –		Wire, wire mesh & barbed wire: 0.73
	Balloons, balls & toys: 0.70 –	Cupe	Cardboard boxes & fragments: 0.78 ood trays, food wrappers, cigarette packs, drink containers: 0.78
– Rubber%:: 1.15	Footwear (jandals, flip-flops): 0.05	Cups, I	ood trays, lood wrappers, cigarette packs, driftk containers. 0.78
	Rubber bands: 0.34 Condoms: 0.03	Paper, Cardboard%:: 14.43	
	Other Rubber (specify): 0.03	ruper, eurobolita/ii. 14.45	Paper (including newspapers & magazines): 12.82
- Wood%:: 1.20	Ice-cream sticks, chip forks, chopsticks & toothpicks: 0.94 -		
	Processed timber and pallet crates: 0.05 Matches & fireworks: 0.21		Tubes for fireworks: 0.05 Balloons, balls & toys: 0.73
	Sanitary (cotton buds, tampon applicators, toothbrushes): 0.05		Footwear (jandals, flip-flops): 0.05 Inner-tubes and rubber sheet: 0.15
	UN-Sanitary (used nappies, used tampons, used bandages, bloody): 0.23	Rubber%:: 2.35	Other Rubber (specify): 0.15 Rubber bands: 1.27
		Wood%:: 2.20	Ice-cream sticks, chip forks, chopsticks & toothpicks: 2.00
Other%:: 29.79	Chewing gum: 26.29		Other Wood (specify): 0.15 Processed timber and pallet crates: 0.05 Chewing gum: 1.22
	Faeces: 0.13	Other%:: 5.41	Faeces: 0.10
	Food goo: 3.03		Food goo: 3.56 Sanitary (cotton buds, tampon applicators, toothbrushes): 0.29
	Appliances & Electronics: 0.03	UN-Sanit	ary (used nappies, used tampons, used bandages, bloody): 0.24

Other Other (specify): 0.03

Percentage of litter by UNEP category 2021/22.

Percentage of litter by UNEP category 2017/18.