

# 2020 | WA Beach Clean-up Report

Tackling marine debris impacting the Western Australian coastline and marine environment



AUSTRALIAN  
MARINE DEBRIS INITIATIVE



Keep   
Australia  
Beautiful  
 WA



*Tangaroa Blue Foundation would like to acknowledge the First Nations people as the Traditional Owners of country across Australia and recognise their continuing connection to land, waters and culture. We pay our deep respects to all Elders past, present and emerging.*



*The volunteers from Care for Hedland in the Rangelands NRM region once again participated in the WA Beach Clean-up.*

*Cover photo: The stunning coastline of WA's South Coast - volunteers cleaning up at Esperance.*

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# Introduction

The 2020 WA Beach Clean-Up marked the 16th year of this special event in the Tangaroa Blue Foundation calendar, with support from Keep Australia Beautiful WA.

Over 1200 people from across the community spent 2780 volunteer hours participating, from dedicated environmental groups to Indigenous Land and Sea Rangers, workplace teams, businesses and groups of families and friends.

Since 2005, around the middle weekend of October, beaches, estuaries and coastal areas across Western Australia have been cleaned up and vital data submitted to the Australian Marine Debris Initiative Database, a national database that contributes to the understanding, monitoring and managing of marine debris. The region covered is vast, extending this year from the Eyre Bird Observatory in the Great Australian Bight, northwards eighteen hundred kilometres to the remote coasts of Yampi Sound and the Anjo Peninsula in the Kimberley region, and completing the circuit south then east along the West Australian coastline. This area encompasses a variety of marine debris sources and circulation processes.

Tangaroa Blue Foundation (TBF) encourages a whole of landscape approach for addressing the marine debris issue. TBF defines the term 'marine debris' in a broad sense that includes man-made waste, litter and debris in any oceanic, coastal, inland water and shoreline environment. Knowing what kinds of debris are impacting a location and having a guide to its possible origins is a necessary step toward finding solutions. Whilst sorting and recording marine debris data can be an onerous task, the effort spent in collecting that data is invaluable as it enables the development and ongoing improvement of knowledge to guide solutions.

Data collected during clean-ups provides a snapshot of debris across the state and helps to compare the types of debris found in different regions and location-types over time. This information can then be used to identify problem items, locations and stakeholders and inform source reduction efforts at scales varying from local initiatives to state-wide plans.

This report provides a snapshot of marine debris around the West Australian NRM regions in October 2020 together with some highlights of the clean-ups and people and groups involved in this year's event.

# WA NRM regions

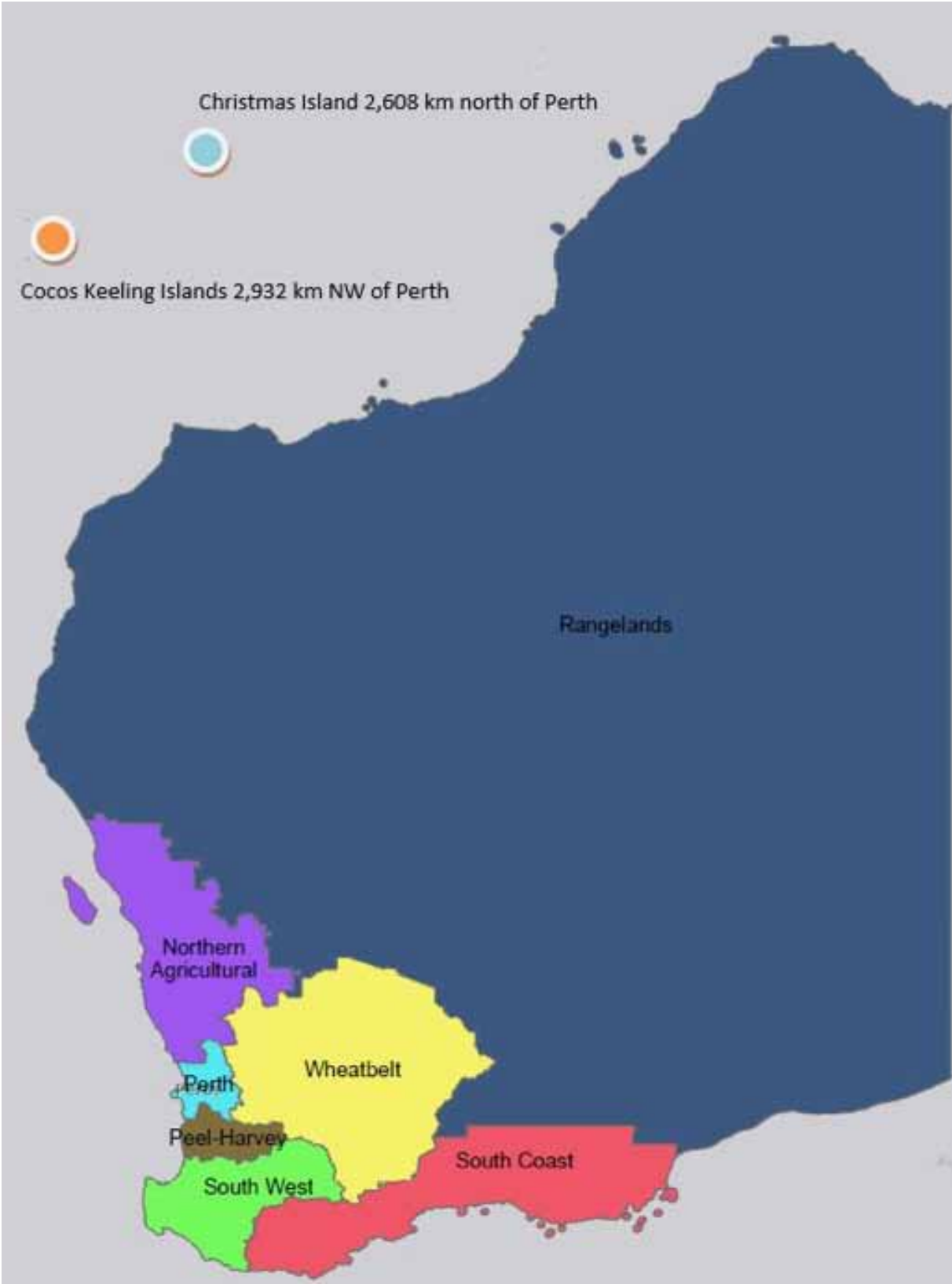
Clean-up details by NRM								
	Clean-ups	Items	Bags	Weight kg	Volunteer occasions	Hours	Distance m	Sites cleaned
South Coast	11	13,248	60	257	83	215	27,300	11
South West	24	15,089	94	898	302	741	66,900	22
Peel-Harvey	3	3,873	32	352	143	246	5,700	3
Perth	29	28,773	100	393	367	958	46,210	25
Northern Agricultural	30	9,240	108	846	149	142	24,875	27
Rangelands North	9	5,981	89	429	155	474	12,050	9
Rangelands South	1	276	7	35	4	4	1,500	1
WABCU2020	107	76,480	490	3,209	1,203	2,780	184,535	98



*Cage Roads Brewing brought along their crew for a clean-up at South Beach in Fremantle.*

Top ranking items WABCU2020			
RANK	ITEM	TOTAL	PERCENT
1	Plastic bits & pieces hard & solid	22702	31%
2	Cigarette butts & filters	5516	7%
3	Plastic film remnants (bits of plastic bag, wrap etc)	5273	7%
4	Glass or ceramic broken	4289	6%
5	Rope & net scraps less than 1 metre	3372	4%
6	Plastic packaging food (wrap, packets, containers)	3371	4%
7	Lids & tops, pump spray, flow restrictor & similar	3030	4%
8	Paper & cardboard packaging	2392	3%
9	Rope (estimated length in metres)	1949	3%
10	Foam insulation & packaging (whole and remnants)	1923	3%
11	Straws, confection sticks, cups, plates & cutlery	1889	2%
12	Aluminium cans	1801	2%
13	Plastic drink bottles (water, juice, milk, soft drink)	1602	2%
14	Foam buoys	1582	2%
15	Metal bottle caps, lids & pull tabs	1336	2%
16	Glass beer stubbies & pre-mixed alcohol bottles	1119	1%
17	Fishing line in metres (recreational)	1069	1%
18	Commercial fishing remnants (float, pot, crate bits)	867	1%
19	Plastic bags (supermarket, garbage, dog poo, ice)	764	1%
20	Sanitary (tissues, nappies, condoms, cotton buds)	695	1%
<b>Top 20 total</b>		<b>66541</b>	<b>87%</b>
21-103	Remainder of items	9939	13%
<b>WABCU2020 Total</b>		<b>76480</b>	<b>100%</b>

WA NRM regions



# NRM region data guide

Each NRM region is given a separate section below, which provides data and information on the following:

## Top ranking items

The types of items and their probable onshore and offshore sources provide information for developing Source Reduction Plans. The table showing the top ranking items is colour-coded for coastal beach and island sites to differentiate between items that have a high probability of coming from local land sources and those with a high probability of coming from offshore sources such as shipping, fishing, and ocean current-borne debris. The sites from which the 2020 WA Beach Clean-up data was collected are listed in the left-hand column of this table.

## Land and Sea Source Index (LSSI)

Onshore and offshore sources of marine debris are calculated using the AMDI Land and Sea Source Index (LSSI) which is not a direct measurement but a tool for providing an estimate of the land and sea components of beach debris. The LSSI concept makes use of the fact that different items behave differently in the coastal and marine environment. This difference of behaviour is based on the physical properties of items including form, material composition, buoyancy etc. House bricks and bicycles found on a beach are much less likely to have floated ashore than fishing buoys. Some items quickly lose their form, sink or snag and therefore do not or cannot travel far. Other items drift to a greater or lesser extent and some items such as lidded plastic water bottles and polystyrene foam travel great distances relatively quickly. These differences are sorted into six Dispersion Categories. The underlying principle involves estimating the (subjective) probability that items grouped under any of the dispersion categories have a local source. (A local source can be direct littering, litter escaping nearby drains or any other local land-based action resulting in loss into the environment). The LSSI therefore estimates the proportion of the total debris collected that is likely to have a land source and this can range from 100% to 0%.

## Clean-up details, top 3 materials and LSSI

The second table shows the number of clean-ups, the total items removed, and the weight of items removed for the location category, then the top 3 materials and finally the LSSI percentages. The rows below show the historic (2015-2019) data. It is important to note that due to marine debris loads and volunteer capacity at each event, not all items removed during community clean-up events may have been recorded into the AMDI Database. In these cases, an accepted sample methodology was used to record minimum volumes of marine debris data.

## Wildlife

Marine debris is a major threat to the health of marine environment in Western Australia and can injure and kill marine life such as turtles, dugongs, dolphins, and seabirds, as well as impacting corals and other reef ecosystems. Observations of dead animals are noted in the opening text of each NRM region's section. These recordings are anecdotal with a small number indicating the possibility of marine debris playing a role, mostly due to entanglement in nets. Proper scientific assessment is needed to identify the cause of death of wildlife and this does not usually occur for sightings during beach clean-ups.



# NRM region data results



2 Mile Beach at Quobba Station near Carnarvon.



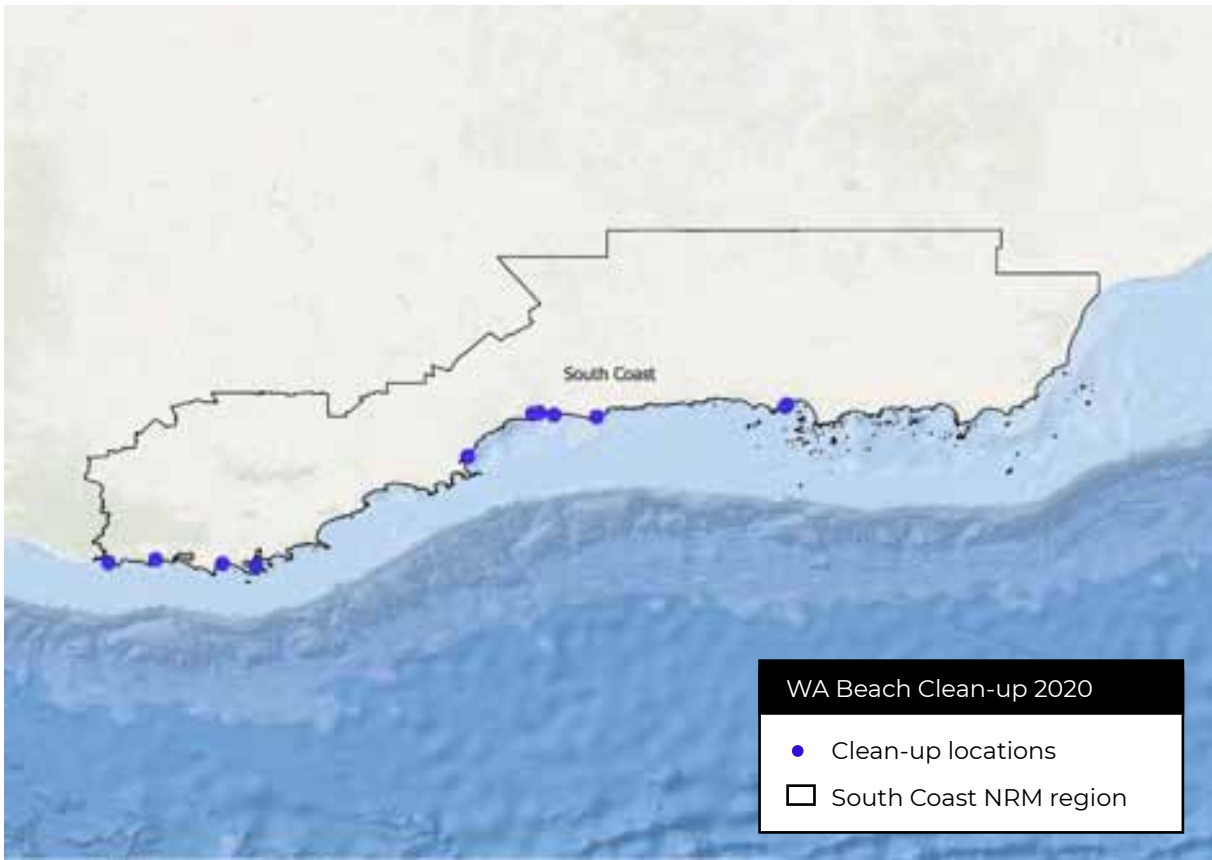
# South Coast

There was a good coverage across the South region this year with events held in Walpole, Denmark, Albany, Bremmer Bay, Hopetoun and Esperance. There is a marked difference between the kind of debris recorded at sites within or close to towns where food, drink, smoking and packaging items rank highly and the isolated beaches where commercial fishing items and current-borne items such as water bottles and lids and ubiquitous plastic fragments predominate.



*Mistaken Island, along WA's South Coast.*

# South Coast Clean-up Sites



## Items and sources - South Coast Coastal beaches in built areas

Clean-up sites / notes	Top-ranking items			
Esperance Bay Yacht Club  Mistaken Island, Frenchman Bay, Albany  West Beach, Esperance  .	Rank	Item	Total	%
	1	Plastic packaging food (wrap, packets, containers)	161	20%
	2	Cigarette butts & filters	90	12%
	3	Glass or ceramic broken	61	8%
	4	Plastic bits & pieces hard & solid	49	6%
	5	Glass beer stubbies & pre-mixed alcohol bottles	43	6%
	6	Plastic film remnants (bits of plastic bag, wrap etc)	34	4%
	7	Plastic bags (supermarket, garbage, dog poo, ice)	30	4%
	8	Paper & cardboard packaging	29	4%
	9	Plastic wrap non food (bubble wrap etc)	28	4%
	10	Plastic drink bottles (water, juice, milk, soft drink)	27	4%
		<b>552</b>	<b>72%</b>	

Item origin legend
Land group - High probability of these items being local in origin
Intermediate group - Origin of these items is proportional to the LSSI
Offshore group - High probability of these items being of offshore origin

WA Beach Clean-up 2020 - Coastal beaches in built areas							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Glass & ceramic	Metal	Debris from the land	Debris from the sea
<b>3</b>	<b>763</b>	<b>24</b>	<b>66%</b>	<b>14%</b>	<b>5%</b>	<b>72%</b>	<b>28%</b>

WA 2015 – 2019 - Coastal beaches in built areas							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Glass & ceramic	Metal	Debris from the land	Debris from the sea
<b>19</b>	<b>6167</b>	<b>223</b>	<b>79%</b>	<b>10%</b>	<b>3%</b>	<b>46%</b>	<b>54%</b>



## Items and sources - South Coast Coastal beaches away from built areas

Clean-up sites / notes	Top-ranking items			
2 Mile Beach, Hopetoun	Rank	Item	Total	%
4 Mile Beach, Hopetoun	1	Plastic bits & pieces hard & solid	9562	76%
Conspicuous Cliffs	2	Lids & tops, pump spray, flow restrictor & similar	618	5%
Masons Bay, Jettacardup	3	Rope & net scraps less than 1 metre	542	4%
Mutton Bird Beach	4	Rope (estimated length in metres)	541	4%
Mylies Beach	5	Plastic drink bottles (water, juice, milk, soft drink)	145	1%
Parry Beach East of Inlet	6	Commercial fishing remnants (float, pot, crate bits)	131	1%
Trigelow Beach, Bremmer Bay	7	Newspaper, magazines & brochures	100	1%
	8	Plastic packaging food (wrap, packets, containers)	83	1%
	9	Foam insulation & packaging (whole and remnants)	82	1%
	10	Strapping band scraps	66	1%
			<b>11870</b>	<b>95%</b>
Item origin legend				
Land group - High probability of these items being local in origin				
Intermediate group - Origin of these items is proportional to the LSSI				
Offshore group - High probability of these items being of offshore origin				

WA Beach Clean-up 2020 - Coastal beaches away from built areas							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Paper & cardboard	Foam	Debris from the land	Debris from the sea
<b>8</b>	<b>12485</b>	<b>233</b>	<b>96%</b>	<b>1%</b>	<b>1%</b>	<b>2%</b>	<b>98%</b>

WA 2015 – 2019 - Coastal beaches away from built areas							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Foam	Glass & ceramic	Debris from the land	Debris from the sea
<b>70</b>	<b>29827</b>	<b>1675</b>	<b>90%</b>	<b>4%</b>	<b>2%</b>	<b>8%</b>	<b>92%</b>

# South Coast Photo gallery



1. and 3. Volunteers on Mistaken Island, 4. Taking a lunch break at Mutton Bird Beach, 2. and 5. Volunteers head down to a beach in Esperance.



# South West

Coverage of the South West region this year extended from Yeagarup near Pemberton, across to the Augusta area, Margaret River, Dunsborough, Busselton and Bunbury areas. Differences between beaches in or close to towns and those away from towns were not as distinct as those from the South region, reflecting the high visitation and hence slightly higher amounts of local waste and litter on these beaches.



*Boodjidup Beach near Margaret River.*

# South West clean-up sites





## Items and sources - South West Coastal beaches in built areas

Clean-up sites / notes	Top-ranking items			
	Rank	Item	Total	%
Bunker Bay	1	Plastic bits & pieces hard & solid	2511	35%
Busselton Jetty Foreshore	2	Cigarette butts & filters	433	6%
Koombana Bay, Bunbury	3	Paper & cardboard packaging	417	6%
Marybrook Beach	4	Rope (estimated length in metres)	380	5%
Meelup Beach	5	Plastic film remnants (bits of plastic bag, wrap etc)	308	4%
Quindalup Beach	6	Rope & net scraps less than 1 metre	302	4%
Augusta Multiple Sites, Rivermouth to Skippy Rock	7	Glass or ceramic broken	292	4%
Binningup Beach	8	Plastic packaging food (wrap, packets, containers)	288	4%
Jays Beach	9	Lids & tops, pump spray, flow restrictor & similar	243	3%
	10	Plastic drink bottles (water, juice, milk, soft drink)	228	3%
			<b>5402</b>	<b>74%</b>

Item origin legend
Land group - High probability of these items being local in origin
Intermediate group - Origin of these items is proportional to the LSSI
Offshore group - High probability of these items being of offshore origin

WA Beach Clean-up 2020 - Coastal beaches in built areas							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Glass & ceramic	Paper & cardboard	Debris from the land	Debris from the sea
<b>9</b>	<b>7327</b>	<b>362</b>	<b>75%</b>	<b>6%</b>	<b>6%</b>	<b>47%</b>	<b>53%</b>

WA 2015 - 2019 - Coastal beaches in built areas							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Glass & ceramic	Metal	Debris from the land	Debris from the sea
<b>364</b>	<b>131783</b>	<b>4359</b>	<b>70%</b>	<b>10%</b>	<b>6%</b>	<b>72%</b>	<b>28%</b>

## Items and sources - South West Coastal beaches away from built areas

Clean-up sites / notes	Top-ranking items			
	Rank	Item	Total	%
Quarry Bay	1	Plastic bits & pieces hard & solid	3966	56%
Bobs Hollow	2	Rope & net scraps less than 1 metre	454	7%
Boodjidup Beach	3	Plastic film remnants (bits of plastic bag, wrap etc)	423	6%
Cosy Corner	4	Lids & tops, pump spray, flow restrictor & similar	336	5%
Deepdene	5	Glass or ceramic broken	200	3%
Foul Bay	6	Fishing line in metres (recreational)	156	2%
Hillview	7	Glass beer stubbies & pre-mixed alcohol bottles	148	2%
Margaret Rivermouth to Joey's Nose	8	Sanitary (tissues, nappies, condoms, cotton buds)	141	2%
Milyeannup	9	Commercial fishing remnants (float, pot, crate bits)	122	2%
Redgate Beach	10	Rope (estimated length in metres)	121	2%
South Beach			<b>6067</b>	<b>87%</b>
Yeagarup Beach				

Item origin legend
Land group - High probability of these items being local in origin
Intermediate group - Origin of these items is proportional to the LSSI
Offshore group - High probability of these items being of offshore origin

WA Beach Clean-up 2020 - Coastal beaches away from built areas							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Glass & ceramic	Other	Debris from the land	Debris from the sea
<b>14</b>	<b>6965</b>	<b>481</b>	<b>88%</b>	<b>5%</b>	<b>2%</b>	<b>14%</b>	<b>86%</b>

WA 2015 - 2019 - Coastal beaches away from built areas							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Glass & ceramic	Foam	Debris from the land	Debris from the sea
<b>494</b>	<b>157997</b>	<b>12319</b>	<b>82%</b>	<b>6%</b>	<b>4%</b>	<b>14%</b>	<b>84%</b>

## Items and sources - South West Inland waterways

Clean-up sites / notes	Top-ranking items*			
Wellesley River, Australind	Rank	Item	Total	%
*This coastal type is not colour coded as all items have a local origin	1	Plastic film remnants (bits of plastic bag, wrap etc)	300	37%
	2	Paper & cardboard packaging	101	12%
	3	Foam insulation & packaging (whole and remnants)	70	9%
	4	Plastic bits & pieces hard & solid	61	8%
	5	Cloth, clothing, hats & towels	56	7%
	6	Plastic packaging food (wrap, packets, containers)	46	6%
	7	Straws, confection sticks, cups, plates & cutlery	36	5%
	8	Plastic drink bottles (water, juice, milk, soft drink)	27	3%
	9	Lids & tops, pump spray, flow restrictor & similar	12	2%
	10	Rope & net scraps less than 1 metre	11	1%
			<b>720</b>	<b>90%</b>
Item origin legend				
Land group - High probability of these items being local in origin				
Intermediate group - Origin of these items is proportional to the LSSI				
Offshore group - High probability of these items being of offshore origin				

WA Beach Clean-up 2020 - Inland waterways							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Glass & ceramic	Other	Debris from the land	Debris from the sea
<b>1</b>	<b>797</b>	<b>55</b>	<b>65%</b>	<b>13%</b>	<b>9%</b>	<b>100%</b>	<b>0%</b>

WA 2015 - 2019 - Inland waterways							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Glass & ceramic	Foam	Debris from the land	Debris from the sea
<b>11</b>	<b>3373</b>	<b>910</b>	<b>77%</b>	<b>8%</b>	<b>7%</b>	<b>100%</b>	<b>0%</b>

# South West Photo gallery



1. DBCA at Circus Beach. 2. The clean-up team at Gnarabup. 3. "Leave only footprints" at Boodjidup Beach. 4. Some of the younger crew at Busselton Jetty. 5. The happy crew at Blackhurst Park in Dunsborough. 6. Family clean-up at Busselton Jetty.



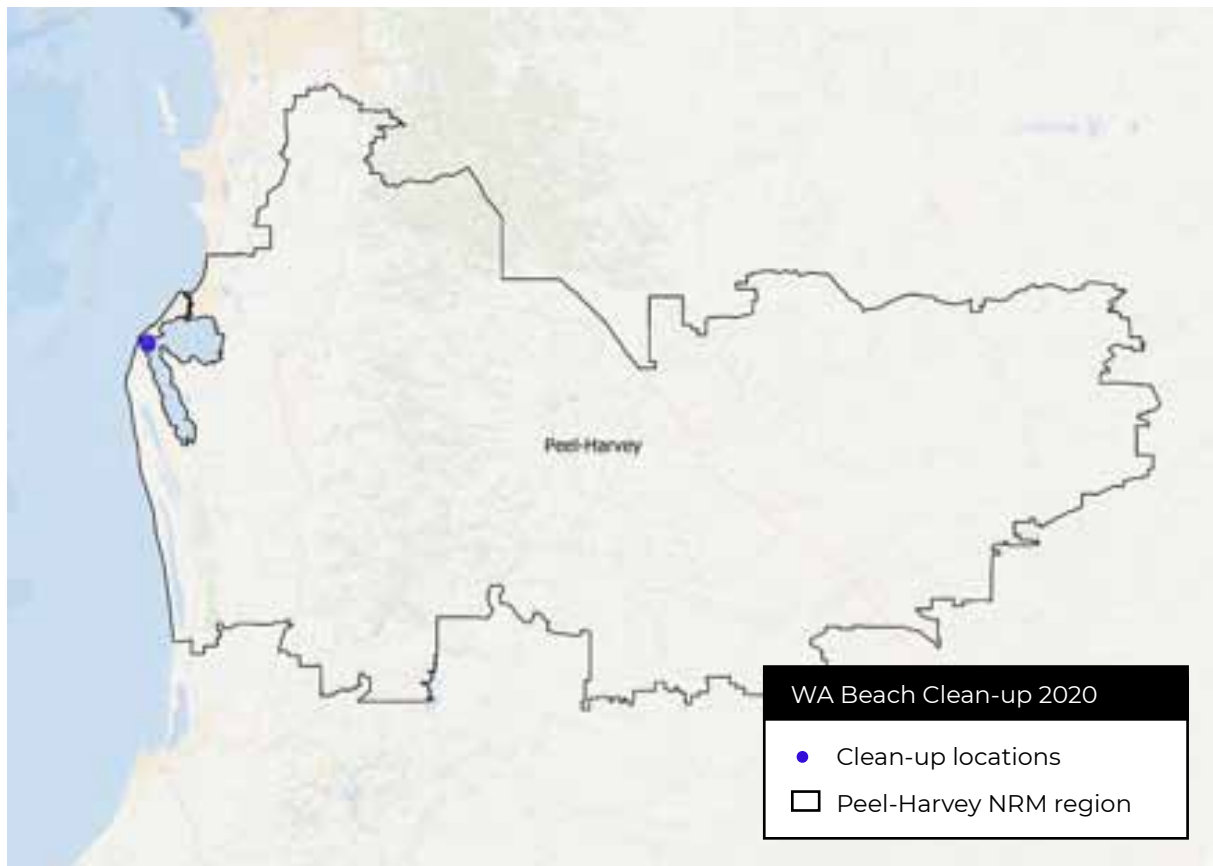
# Peel-Harvey

The clean-up effort in Peel-Harvey this year centred on the Dawesville Cut embankments. Top ranking items on these embankments reflect the fishing and other recreational uses of these areas.



Litter collected during the clean-up at Dawesville.

## Peel-Harvey clean-up sites



## Items and sources - Peel-Harvey

### On ground

Clean-up sites / notes	Top-ranking items*			
Dawesville Cut Embankment North Side	Rank	Item	Total	%
Dawesville Cut Embankment South Side	1	Cigarette butts & filters	700	17%
Multiple Sites, Dawesville Cut	2	Plastic packaging food (wrap, packets, containers)	261	7%
	3	Fishing line in metres (recreational)	259	7%
	4	Plastic film remnants (bits of plastic bag, wrap etc)	253	7%
	5	Bait & tackle bags & packaging	200	5%
	6	Plastic bits & pieces hard & solid	195	5%
	7	Paper & cardboard packaging	165	4%
	8	Metal bottle caps, lids & pull tabs	138	4%
	9	Aluminium cans	125	3%
	10	Glass or ceramic broken	122	3%
			<b>2418</b>	<b>62%</b>
*This coastal type is not colour coded as all items have a local origin	Item origin legend			
	Land group - High probability of these items being local in origin			
	Intermediate group - Origin of these items is proportional to the LSSI			
	Offshore group - High probability of these items being of offshore origin			

WA Beach Clean-up 2020 - On ground							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Metal	Glass & ceramic	Debris from the land	Debris from the sea
<b>3</b>	<b>3873</b>	<b>352</b>	<b>68%</b>	<b>10%</b>	<b>8%</b>	<b>100%</b>	<b>0%</b>

WA 2015 - 2019 - On ground							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Metal	Glass & ceramic	Debris from the land	Debris from the sea
<b>31</b>	<b>19505</b>	<b>534</b>	<b>74%</b>	<b>9%</b>	<b>5%</b>	<b>100%</b>	<b>0%</b>



# Peel-Harvey Photo gallery



1-6. Teams of helpers at the "Reel it In" clean-up event coordinated by DBCA and local partners. This event included two sites around Dawesville/Mandurah from the Port Bouvard Yacht Club, including both north and south of the Cut and Mariner's Cove boat ramp.





# Perth

There was good coverage across the Perth region including 6 clean-ups along the banks of the Swan River. Seventy five percent of debris on coastal beaches came from local origins with littered items making up at least half of the top ranking items.

Clean-ups were held at Rottneet and Penguin Islands this year. The Penguin Island event, organised by plastic researchers from the University of Western Australia and in partnership with the staff on Penguin Island, recovered numerous items from an abandoned pelican rookery. Pelicans are known to feed at a nearby tip and bring back all sorts of rubbish to the island. Most notable was the number of meat packing ties and glass fragments.

A clean-up around the Port Coogee Marina this year netted close to 200 items with industrial strapping bands identified as an item of concern.

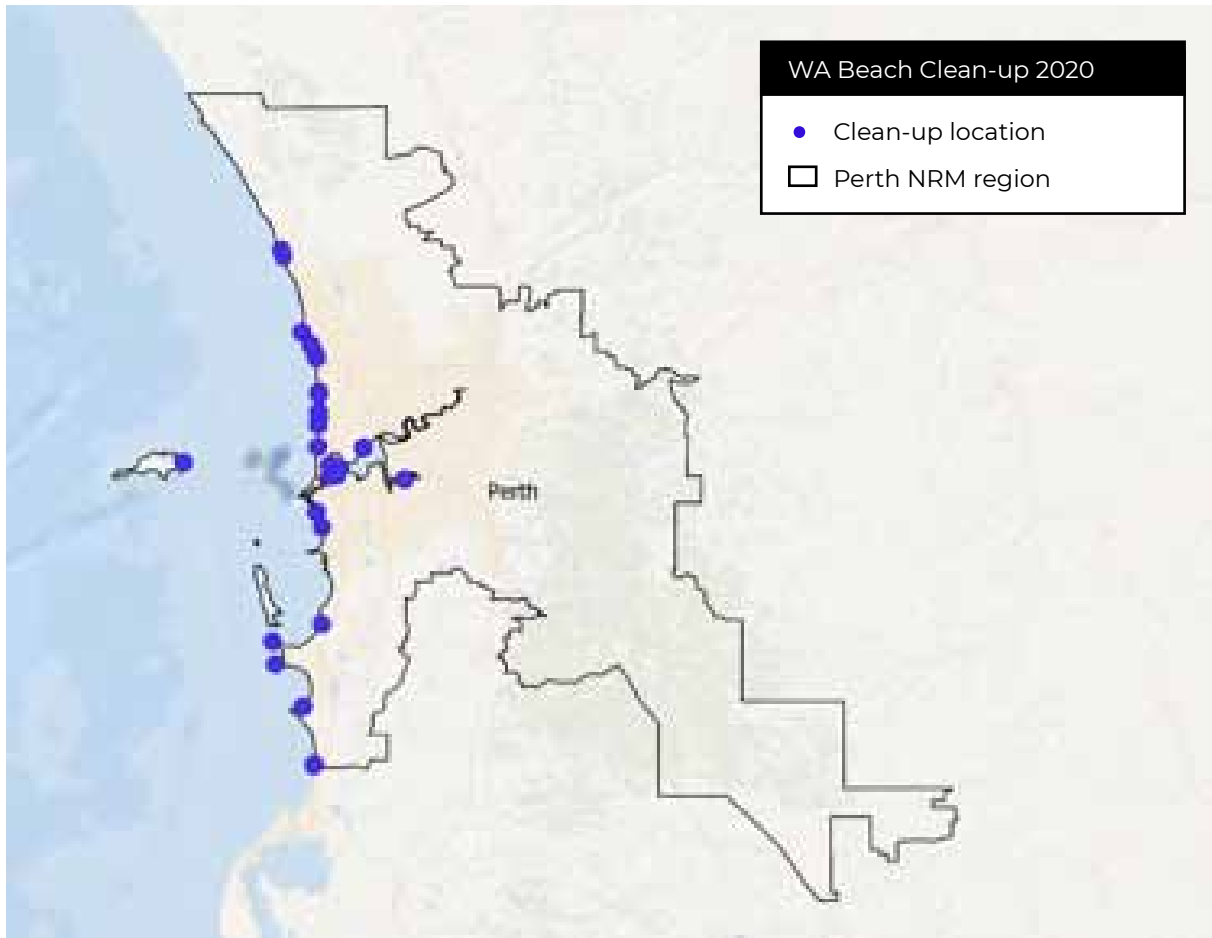
Minim Cove at Mosman Park on the Swan River produced close to 8700 items of debris from this known hotspot. The AUSMAP / Ocean Remedy crew also recovered an estimated 20,000 plastic resin pellets.

Earlier this year, Tangaroa Blue Foundation coordinated the “Swan Canning Estuary Debris Project” which monitored the amount and distribution of plastic pollution along the Swan River shoreline between Bicton and Cannington. The project aimed to gain new insights into plastic pollution, introduce monitoring and data collection methods to participants and generate interest in continued monitoring and clean-up activity along the Swan River foreshores.



*South Beach, part of the Gage Roads Brewery clean-up with Tangaroa Blue Foundation.*

## Perth clean-up sites





## Items and sources - Perth Coastal beaches in built areas

Clean-up sites / notes	Top-ranking items			
	Rank	Item	Total	%
Kennedy Bay Beach	1	Cigarette butts & filters	2838	20%
Kwinana Beach	2	Glass or ceramic broken	2050	15%
Point Peron	3	Plastic bits & pieces hard & solid	1251	9%
South Beach, Fremantle	4	Paper & cardboard packaging	1093	8%
Brighton Beach Scarborough	5	Plastic film remnants (bits of plastic bag, wrap etc)	1083	8%
City Beach	6	Plastic packaging food (wrap, packets, containers)	863	6%
Clayton Beach	7	Metal bottle caps, lids & pull tabs	561	4%
Dog Beach, South City Beach	8	Straws, confection sticks, cups, plates & cutlery	332	2%
Floreat Beach	9	Lids & tops, pump spray, flow restrictor & similar	286	2%
Lennard Pool	10	Fishing line in metres (recreational)	272	2%
Pinnaroo			<b>10629</b>	<b>76%</b>
Rosslare Park Beach				
Singleton Beach				
Sorrento Beach				
Swanbourne Beach				
Watermans Bay				

Item origin legend
Land group - High probability of these items being local in origin
Intermediate group - Origin of these items is proportional to the LSSI
Offshore group - High probability of these items being of offshore origin

WA Beach Clean-up 2020 - Coastal beaches in built areas							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Glass & ceramic	Paper & cardboard	Debris from the land	Debris from the sea
<b>20</b>	<b>14059</b>	<b>295</b>	<b>58%</b>	<b>18%</b>	<b>8%</b>	<b>75%</b>	<b>25%</b>

WA 2015 - 2019 - Coastal beaches in built areas							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Paper & cardboard	Glass & ceramic	Debris from the land	Debris from the sea
<b>400</b>	<b>639358</b>	<b>13887</b>	<b>71%</b>	<b>8%</b>	<b>7%</b>	<b>69%</b>	<b>31%</b>

## Items and sources - Perth Islands

Clean-up sites / notes	Top-ranking items			
Penguin Island, Shoalwater Bay Islands Reserve  Rottnest Island Thomson Bay East End and Bickley Bay	Rank	Item	Total	%
	1	Glass or ceramic broken	6643	42%
	2	Binding, thread, string & cord (natural fibre)	5048	33%
	3	Plastic film remnants (bits of plastic bag, wrap etc)	1350	9%
	4	Plastic packaging food (wrap, packets, containers)	720	5%
	5	Plastic bits & pieces hard & solid	337	2%
	6	Plastic wrap non food (bubble wrap etc)	220	1%
	7	Metal bottle caps, lids & pull tabs	175	1%
	8	Glass beer stubbies & pre-mixed alcohol bottles	156	1%
	9	Straws, confection sticks, cups, plates & cutlery	117	1%
10	Synthetic cardboard (corflute) signs & packaging	110	1%	
		<b>14876</b>	<b>96%</b>	
Item origin legend				
Land group - High probability of these items being local in origin				
Intermediate group - Origin of these items is proportional to the LSSI				
Offshore group - High probability of these items being of offshore origin				

WA Marine Debris Project 2020 - Islands							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Glass & ceramic	Plastic	Cloth	Debris from the land	Debris from the sea
<b>2</b>	<b>841</b>	<b>9</b>	<b>53%</b>	<b>22%</b>	<b>19%</b>	<b>76%</b>	<b>24%</b>

WA 2015 – 2019 - Islands							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Glass & ceramic	Foam	Debris from the land	Debris from the sea
<b>27</b>	<b>15260</b>	<b>10359</b>	<b>80%</b>	<b>5%</b>	<b>5%</b>	<b>44%</b>	<b>56%</b>

## Items and sources - Perth Inland waterways

Clean-up sites / notes	Top-ranking items*			
Blackwall Reach Foreshore	Rank	Item	Total	%
Matilda Bay Foreshore, Nedlands	1	Plastic bits & pieces hard & solid	2981	25%
Minim Cove, Mosman Park	2	Plastic film remnants (bits of plastic bag, wrap etc)	1850	16%
Mosman Bay Foreshore	3	Foam insulation & packaging (whole and remnants)	1337	11%
Point Walter Reserve	4	Plastic packaging food (wrap, packets, containers)	1153	10%
Shelley Foreshore	5	Rope & net scraps less than 1 metre	996	8%
	6	Lids & tops, pump spray, flow restrictor & similar	623	5%
	7	Straws, confection sticks, cups, plates & cutlery	459	4%
	8	Glass or ceramic broken	236	2%
	9	Foam cups, food packs & trays	214	2%
	10	Paper & cardboard packaging	179	1%
			<b>10028</b>	<b>84%</b>
*This coastal type is not colour coded as all items have a local origin	Item origin legend			
	Land group - High probability of these items being local in origin			
	Intermediate group - Origin of these items is proportional to the LSSI			
	Offshore group - High probability of these items being of offshore origin			

WA Beach Clean-up 2020 - Inland waterways							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Foam	Glass & ceramic	Debris from the land	Debris from the sea
<b>6</b>	<b>11935</b>	<b>59</b>	<b>78%</b>	<b>13%</b>	<b>3%</b>	<b>100%</b>	<b>0%</b>

WA 2015 – 2019 - Inland waterways							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Glass & ceramic	Paper & cardboard	Debris from the land	Debris from the sea
<b>57</b>	<b>63995</b>	<b>1644</b>	<b>61%</b>	<b>18%</b>	<b>7%</b>	<b>100%</b>	<b>0%</b>



## Items and sources - Perth

### On ground

Clean-up sites / notes	Top-ranking items*			
Port Coogee Marina Infrastructure	Rank	Item	Total	%
Item totals were estimated.	1	Cigarette butts & filters	500	25%
*This coastal type is not colour coded as all items have a local origin	2	Plastic film remnants (bits of plastic bag, wrap etc)	400	20%
	3	Paper & cardboard packaging	200	10%
	4	Plastic bits & pieces hard & solid	200	10%
	5	Aluminium cans	60	3%
	6	Glass beer stubbies & pre-mixed alcohol bottles	50	3%
	7	Cable ties & plastic fasteners	50	3%
	8	Bait & tackle bags & packaging	50	3%
	9	Foam cups, food packs & trays	50	3%
	10	Plastic drink bottles (water, juice, milk, soft drink)	50	3%
			<b>1610</b>	<b>83%</b>
	Item origin legend			
	Land group - High probability of these items being local in origin			
	Intermediate group - Origin of these items is proportional to the LSSI			
	Offshore group - High probability of these items being of offshore origin			

WA Beach Clean-up 2020 - On ground							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Foam	Glass & ceramic	Debris from the land	Debris from the sea
<b>1</b>	<b>1938</b>	<b>30</b>	<b>73%</b>	<b>12%</b>	<b>6%</b>	<b>100%</b>	<b>0%</b>

WA 2015 – 2019 - On ground							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Glass & ceramic	Paper & cardboard	Debris from the land	Debris from the sea
<b>53</b>	<b>22476</b>	<b>569</b>	<b>77%</b>	<b>6%</b>	<b>6%</b>	<b>100%</b>	<b>0%</b>

# Perth Photo gallery



1. Some of the team at the clean-up hosted by Gage Roads Brewery at South Beach. 2. Volunteers sorting marine debris into categories for AMDI. 3. Tangaroa Blue Staff and volunteers from Point Walter Clean-up along the Swan River. 4. UWA clean-up at Penguin Island. 5. Clean-up team at Point Peron. 6. Murdoch Uni Divers at the Kwinana Bulk Handling Jetty.



# Northern Agricultural

The Jurien Bay Marine Park marine debris week event, held in September, was spent removing debris from the coast between Wedge Island and Jurien Bay. Northern Agricultural Catchments Council covered beaches in Geraldton and around Coronation Beach to the north while the Sunset Beach Community Group retrieved over 400 items from their location. A clean-up of tracks and camp sites around Coronation Beach saw broken glass, aluminium cans and glass stubbies making up over 80% of items.



*Volunteers at Sunset Beach.*



# Northern Agricultural clean-up sites



## Items and sources - Northern Agricultural Coastal beaches in built areas

Clean-up sites / notes	Top-ranking items			
	Rank	Item	Total	%
Coronation Beach Campground	1	Plastic bits & pieces hard & solid	368	21%
Grey South	2	Foam buoys	312	18%
North of Jurien Bay marina	3	Rope & net scraps less than 1 metre	172	10%
Separation Point, Geraldton	4	Cigarette butts & filters	116	7%
Sunset Beach	5	Lids & tops, pump spray, flow restrictor & similar	90	5%
	6	Plastic packaging food (wrap, packets, containers)	76	4%
	7	Plastic film remnants (bits of plastic bag, wrap etc)	51	3%
	8	Plastic drink bottles (water, juice, milk, soft drink)	44	2%
	9	Aluminium cans	43	2%
	10	Paper & cardboard packaging	43	2%
			<b>1315</b>	<b>74%</b>

Item origin legend
Land group - High probability of these items being local in origin
Intermediate group - Origin of these items is proportional to the LSSI
Offshore group - High probability of these items being of offshore origin

WA Beach Clean-up 2020 - Coastal beaches in built areas							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Foam	Metal	Debris from the land	Debris from the sea
<b>6</b>	<b>1778</b>	<b>74</b>	<b>67%</b>	<b>19%</b>	<b>4%</b>	<b>33%</b>	<b>67%</b>

WA 2015 – 2019 - Coastal beaches in built areas							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Glass & ceramic	Paper & cardboard	Debris from the land	Debris from the sea
<b>120</b>	<b>42414</b>	<b>3336</b>	<b>73%</b>	<b>7%</b>	<b>6%</b>	<b>53%</b>	<b>47%</b>

## Items and sources - Northern Agricultural Coastal beaches away from built areas

Clean-up sites / notes	Top-ranking items			
	Rank	Item	Total	%
Billygoat Bay	1	Plastic bits & pieces hard & solid	1244	19%
Coronation Beach	2	Foam buoys	1227	17%
Coronation Beach North	3	Rope & net scraps less than 1 metre	585	8%
Greys Beach South	4	Plastic drink bottles (water, juice, milk, soft drink)	479	7%
Hill River Beach and Rivermouth	5	Rope (estimated length in metres)	476	7%
North of Jurien Bay Marina	6	Commercial fishing remnants (float, pot, crate bits)	449	6%
Oakabella Creek	7	Lids & tops, pump spray, flow restrictor & similar	448	6%
Sandy Cape South	8	Plastic bags (supermarket, garbage, dog poo, ice)	213	3%
North Head Sanctuary	9	Aluminium cans	176	2%
Catalina Bay	10	Strapping band scraps	173	2%
Pumpkin Hollow South			<b>5470</b>	<b>77%</b>
Pumpkin Hollow North				

Item origin legend
Land group - High probability of these items being local in origin
Intermediate group - Origin of these items is proportional to the LSSI
Offshore group - High probability of these items being of offshore origin

WA Beach Clean-up 2020 - Coastal beaches away from built areas							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Foam	Glass & ceramic	Debris from the land	Debris from the sea
<b>23</b>	<b>7109</b>	<b>744</b>	<b>69%</b>	<b>19%</b>	<b>4%</b>	<b>12%</b>	<b>88%</b>

WA 2015 – 2019 - Coastal beaches away from built areas							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Foam	Metal	Debris from the land	Debris from the sea
<b>57</b>	<b>13356</b>	<b>1646</b>	<b>57%</b>	<b>30%</b>	<b>4%</b>	<b>12%</b>	<b>88%</b>



## Items and sources - Northern Agricultural On ground

Clean-up sites / notes	Top-ranking items*			
South Coronation Beach Tracks and Camp Sites	Rank	Item	Total	%
*This coastal type is not colour coded as all items have a local origin, however, it is possible some fishing gear was removed from the beach and deposited in the camp sites and on the tracks by visitors over time.	1	Glass or ceramic broken	228	65%
	2	Aluminium cans	37	10%
	3	Glass beer stubbies & pre-mixed alcohol bottles	26	7%
	4	Rope (estimated length in metres)	17	5%
	5	Paper & cardboard packaging	8	2%
	6	Plastic drink bottles (water, juice, milk, soft drink)	6	2%
	7	Recreation fishing items (lures, floats, rods, reels)	5	1%
	8	Metal scrap & remnants	4	1%
	9	Plastic packaging food (wrap, packets, containers)	2	1%
	10	Foam buoys	2	1%
			<b>335</b>	<b>95%</b>
Item origin legend				
Land group - High probability of these items being local in origin				
Intermediate group - Origin of these items is proportional to the LSSI				
Offshore group - High probability of these items being of offshore origin				

WA Beach Clean-up 2020 - On ground							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Glass & ceramic	Metal	Plastic	Debris from the land	Debris from the sea
<b>1</b>	<b>353</b>	<b>28</b>	<b>72%</b>	<b>13%</b>	<b>11%</b>	<b>100%</b>	<b>0%</b>

WA 2015 – 2019 - On ground							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Cloth	Glass & ceramic	Debris from the land	Debris from the sea
<b>1</b>	<b>55</b>	<b>5</b>	<b>44%</b>	<b>27%</b>	<b>9%</b>	<b>100%</b>	<b>0%</b>

# Northern Agricultural Photo gallery



1. 2. 3. Volunteers from the Sunset Beach community with their haul at the clean-up event.



# Rangelands

Clean-ups were held at Quobba Station, Sampson, Port Hedland, Broome, Yampi Sound and Anjo Peninsula. Seaside Scavenge conducted an event at Broome Town Beach with items totalling in excess of 4200 while the Care for Hedland Environment Association collected 260 items. The Dambimangari Aboriginal Corporation cleaned remote sites in Yampi Sound, where debris levels were relatively light, while the Unguu Rangers cleaned up at Banjal Beach and Truscott Barge Landing on the Anjo Peninsula.



*The Unguu Rangers ran a clean-up at Banjal Beach/ Truscott Barge Landing, on the Anjo Peninsula.*



## Rangelands clean-up sites



## Items and sources - Rangelands (North) Coastal beaches in built areas

Clean-up sites / notes	Top-ranking items			
	Rank	Item	Total	%
Broome Town Beach	1	Aluminium cans	795	14%
Pretty Pool River and Beach	2	Straws, confection sticks, cups, plates & cutlery	667	12%
Cemetery Beach	3	Cigarette butts & filters	619	10%
Port Hedland Boat Ramp	4	Glass or ceramic broken	504	8%
Sampson Beach	5	Plastic film remnants (bits of plastic bag, wrap etc)	443	7%
	6	Miscellaneous paper, labels & tickets	440	7%
	7	Metal bottle caps, lids & pull tabs	371	6%
	8	Plastic bits & pieces hard & solid	275	5%
	9	Lids & tops, pump spray, flow restrictor & similar	235	4%
	10	Plastic packaging food (wrap, packets, containers)	198	3%
			<b>4547</b>	<b>76%</b>

Item origin legend
Land group - High probability of these items being local in origin
Intermediate group - Origin of these items is proportional to the LSSI
Offshore group - High probability of these items being of offshore origin

WA Beach Clean-up 2020 - Coastal beaches in built areas							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Metal	Glass & ceramic	Debris from the land	Debris from the sea
<b>5</b>	<b>5947</b>	<b>304</b>	<b>49%</b>	<b>22%</b>	<b>12%</b>	<b>74%</b>	<b>26%</b>

WA 2015 – 2019 - Coastal beaches in built areas							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Metal	Glass & ceramic	Debris from the land	Debris from the sea
<b>115</b>	<b>23140</b>	<b>4965</b>	<b>70%</b>	<b>11%</b>	<b>9%</b>	<b>50%</b>	<b>50%</b>

## Items and sources - Rangelands (North & South) Coastal beaches away from built areas

Clean-up sites / notes	Top-ranking items			
	Rank	Item	Total	%
2 Mile Beach, Quobba Station	1	Rope (estimated length in metres)	101	32%
Banjo Beach, Anjo Peninsula, Mungalalu (anecdotal information only)	2	Rope & net scraps less than 1 metre	33	10%
Nares Point, Yampi Sound	3	Lids & tops, pump spray, flow restrictor & similar	23	8%
Site 1, Yampi Sound	4	Bleach & cleaner bottles	22	7%
Kanidal Beach (Rangelands south)	5	Plastic containers non food (oil, sealant, chemical)	20	7%
Conilurus Island (This clean-up recovered 5 items from the island - a separate Island page has not been included and the 5 items are not included in the totals on this page but are included in the summary table on page 3)	6	Plastic bags (supermarket, garbage, dog poo, ice)	17	6%
	7	Plastic bits & pieces hard & solid	17	6%
	8	Commercial fishing remnants (float, pot, crate bits)	13	4%
	9	Plastic drink bottles (water, juice, milk, soft drink)	9	3%
	10	Strapping band scraps	8	3%
			<b>263</b>	<b>86%</b>

Item origin legend
Land group - High probability of these items being local in origin
Intermediate group - Origin of these items is proportional to the LSSI
Offshore group - High probability of these items being of offshore origin

WA Beach Clean-up 2020 - Coastal beaches away from built areas							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Metal	Wood	Debris from the land	Debris from the sea
<b>4</b>	<b>305</b>	<b>150</b>	<b>94%</b>	<b>3%</b>	<b>2%</b>	<b>9%</b>	<b>91%</b>

WA 2015 – 2019 - Coastal beaches away from built areas							
Data source clean-up statistics			Materials			Land and sea source index	
Clean-ups	Items removed	Weight Kg	Plastic	Paper & cardboard	Metal	Debris from the land	Debris from the sea
<b>66</b>	<b>16716</b>	<b>1713</b>	<b>58%</b>	<b>19%</b>	<b>8%</b>	<b>23%</b>	<b>77%</b>



# Rangelands Photo gallery



1. and 6. Volunteers from Care for Hedland at Pretty Pool. 2. and 4. Banjal Beach and Truscott Barge Landing with the Unguu Rangers. 3. Sarah and Franki. 5. The launch day for the West Pilbara Turtle Program and Keep It Clean team.

## Contributors and acknowledgements

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- Port Coogee Community Association
- Prevelly Park Penguins
- Quinns Rocks Environmental Group
- Quobba Station
- Right Foot Forward WA
- River Guardians
- Seaside Scavenge
- Sea Shepherd Australia
- Singleton Coastcare
- Southern Crust Pizza
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