



RUBBISH REPORT 2001

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EXECUTIVE SUMMARY

- National Park Reserve sites were the most polluted sites with an average 675 items' of rubbish found in each National Park Reserve site surveyed on Clean Up Australia Day 2001.
- The least polluted sites were river/creek sites with an average of 323 items per site.
- Roadways again had the most number of Clean Up sites surveyed (220) and contributed 16% of the total rubbish collected and surveyed.
- Plastic was the main source of rubbish collected (34%) and was most likely to be found at Other sites which averaged 248 plastic rubbish items per Clean Up site surveyed. Chip and confectionary bags were the most common plastic item encountered on the day, comprising 16.3% of the total plastic and 5.49% of the total rubbish.
- Miscellaneous items were the second most common rubbish source (17%) and were most likely to be found at Parkland sites, which averaged 133 miscellaneous items. Cigarette butts made up 89% of Miscellaneous rubbish items and came in at number one on the 'Ten Least Wanted Items' list. Cigarette butts continue to be the main offender on the day and accounted for 15% of the total rubbish collected and surveyed in 2001.
- The 'Ten Least Wanted Items' accounted for 51% of rubbish collected and surveyed on the day. Glass alcoholic beverage bottles, plastic chip and confectionary bags and small paper pieces follow Cigarette butts on the 'Ten Least Wanted Items' list.
- The most common place to find cigarette butts were Parkland sites with an average of 126 cigarettes per site. National park reserve sites were the next most likely with 83 butts per site, followed by Other sites (76), beach/coastal (75) and roadways (57) while River/creek sites were the least with 42 per site.
- Polystyrene items accounted for fewer than 5% of the total rubbish surveyed. The most common polystyrene item was foam pieces, accounting for nearly 40% of polystyrene items.
- Alcoholic beverage bottles were the most common glass items surveyed making up nearly half (49%) of all glass items. Glass items contributed to 12.1% of the total rubbish surveyed.
- Tyres were the most common Rubber item counted and represented 26% of all the rubber materials collected. Rubber items were the least encountered rubbish type on the day with less than 10 rubber items being found at all site categories.
- Paper and cardboard items were the third highest rubbish source contributing to 15.23% of the total rubbish surveyed. Small paper pieces were the most common paper item encountered accounting for 31.4% of paper and cardboard with the next most common item being cigarette packets (12.8%)
- Soft drink cans were the most common metal/aluminium rubbish items collected contributing 22.2% of these items. Metal and aluminium items contributed to 13.79% of the total rubbish surveyed.
- The second lowest source of rubbish surveyed this year were wood items, contributing only 1.97% of the total rubbish collected. Ice cream sticks made up nearly half (49%) of the wood items surveyed.

The total number of survey forms returned in 2001 was 1,207. Of which 712 had been completed correctly and could be used for data analysis, representing 10.12% of the 7,039 Clean Up sites.

METHODOLOGY

Site supervisors undertake the following activities at the Clean Up Australia Day sites:

- Select and survey one in every five bags of rubbish collected at the site
- Complete the survey forms (the percentage of bags surveyed compared to the total number of bags collected this year was 30%)
- Total each type of rubbish
- Return the form to Clean Up Australia for analysis.

The rubbish report survey form lists 87 specific items grouped under the headings of the type of material. These types of materials make up 'The Major Sources of Rubbish' and include; plastic (bags, bottles and miscellaneous), polystyrene foam, glass, rubber, paper/cardboard, metal/aluminium (cans and miscellaneous), wood and miscellaneous items. The surveys are sorted and grouped according to site categories and the data is analysed and presented on the basis of these site categories and rubbish types.

Clean Up Australia's national office undertakes the statistical analysis as follows:

- Determine the average amount of rubbish surveyed per site by dividing the total amount of rubbish by the number of sites surveyed, nationally and by site category.
- Determine the number of surveys per state
- Determine the number of surveys returned from rural and urban areas
- Determine the percentage of surveys returned as compared to the total number of sites
- Determine the types of rubbish and identify the 'top ten' rubbish items

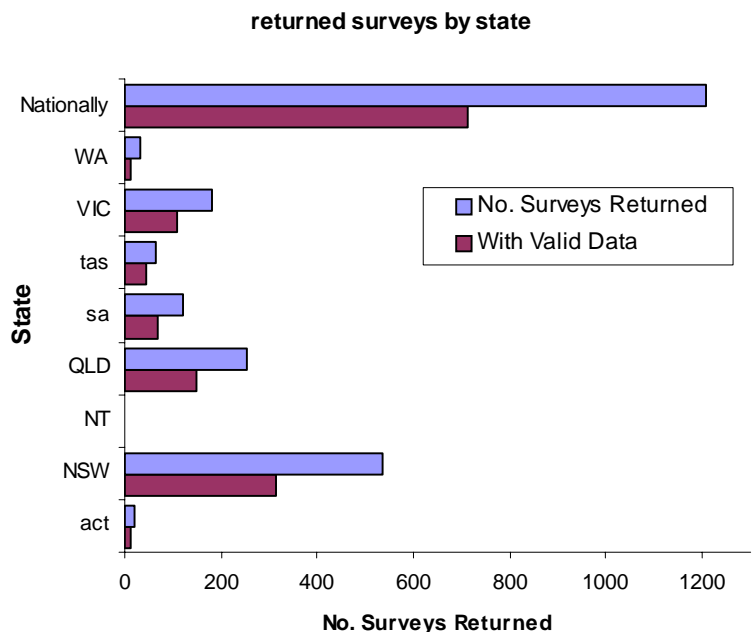
The survey and subsequent analysis illustrate the trends in types and dispersal of rubbish collected.

SITES WHERE THE SURVEYS WERE CARRIED OUT

The Rubbish Report survey forms are distributed to all the Clean Up Australia committees around Australia. The site supervisors complete the survey forms by ideally surveying one in five bags of rubbish collected at each site. The percentage of bags surveyed in comparison to the total number of bags collected was 30%, around 8,700 of around 29,000 bags of rubbish that were recorded in correctly completed returned survey forms. .

The total number of survey forms returned in 2001 was 1,207 of which 712 had been filled in correctly and could be used for data analysis. This represents 10.12% of the 7,039 Clean Up sites. While the return rate is low, this is higher than last year's (7%) and as the Rubbish Report only attempts to indicate trends in types and dispersal of rubbish that is collected on Clean Up Australia Day, it is not meant to be a definitive tool for analysis of litter and littering behaviour of Australians.

The 'returned surveys by state' graph shows the number of surveys returned for each state and the number that were filled in correctly with valid data. NSW returned the most surveys followed by QLD then VIC.



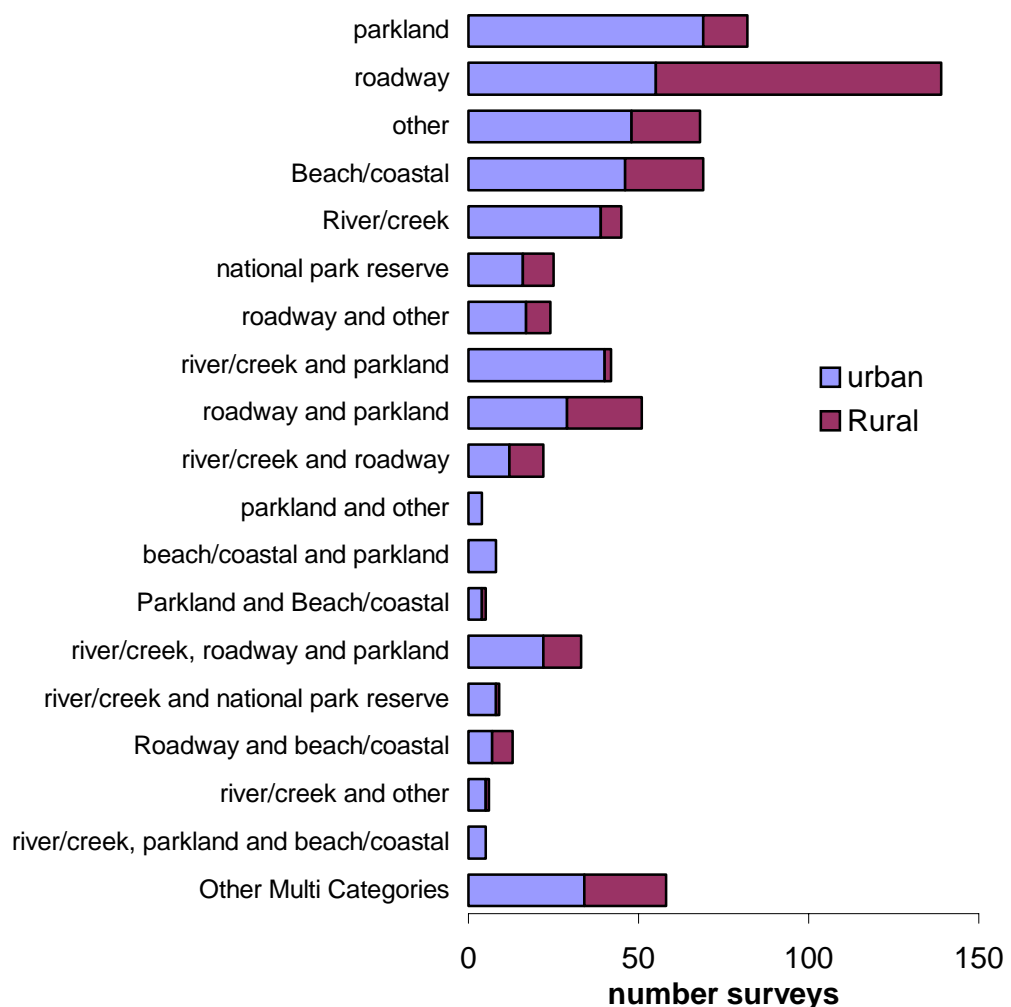
Out of those returned survey forms suitable for data analysis another portion could not be used for site category analysis due to the dual site nominations such as combined 'park/roadway' or 'beach/park' sites. As the data cannot be included twice, (once under each category), these survey report forms were not included in any statistical analysis involving site categories to prevent the skewing of results. They could however still be used in rubbish type statistical analysis not pertaining to site categories.

Roadway sites accounted for 32% of all the surveys analysed followed by Parkland sites at about 19%. The next most popular locations to clean up were Beach/coastal and Other sites both at 16%. The 'other' category used in the report is designed to group a wide variety of miscellaneous clean up sites such as schools, business grounds, carparks, etc. River/creek sites represented 11% of the surveys carried out while National park reserve sites represented 6%. The single site category nomination represented 60% of the surveys returned with valid data.

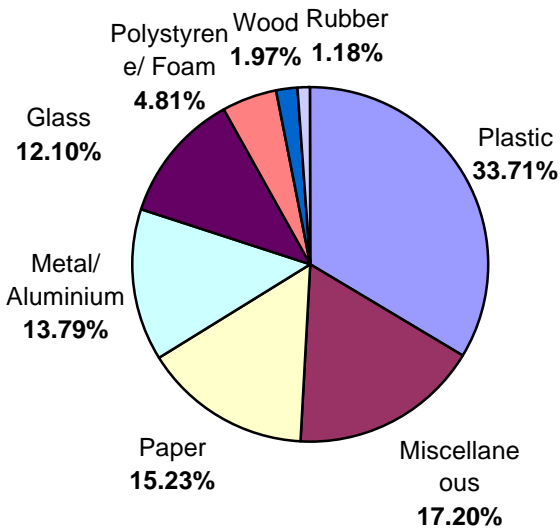
Site categories were broken down further into rural or urban sites to enable an understanding of the types of places where the surveys were being undertaken. The returned survey distribution graph shows what types of sites were cleaned up and whether they were rural or urban. This graph also shows the most common dual or multi site category nominations, which made up the other 40% of the surveys returned with valid data. As mentioned above these could not be used in analysis concerning site types.

In all site categories, except Roadways, more survey forms were returned from urban than rural areas. This is now a trend displayed for a number of years. Also similar to previous years was the preference for Roadway sites in rural areas to be chosen as clean up sites while in urban areas the most survey forms were returned from Parkland.

returned surveys (with valid data) distribution



major sources of rubbish in 2001



MAJOR SOURCES OF RUBBISH

Following the trend over the last seven years, plastic was once again the major source of rubbish, accounting for 33.71% of all the rubbish surveyed.

The second most common type of materials surveyed was miscellaneous rubbish, followed by paper, metal/aluminium, glass and polystyrene/foam, and with the least surveyed material types being wood and rubber.

The contribution of these sources of rubbish to the total rubbish surveyed is consistent with previous years except for changes to Miscellaneous and Metal/aluminium sources. Miscellaneous rubbish has increased its percentage of rubbish significantly moving from the fourth most common source of rubbish in previous years to the second most common source of rubbish in 2001.

This may possibly be attributed wholly to the increase in the number of cigarette butts surveyed this year (a miscellaneous item). Metal/Aluminium rubbish has dropped from the second most common source of rubbish in 2000 to the fourth most common source of rubbish in 2001. It is continually disappointing to find each year that lots of the items in these rubbish sources polluting our environment are recyclable.

THE TEN LEAST WANTED ITEMS

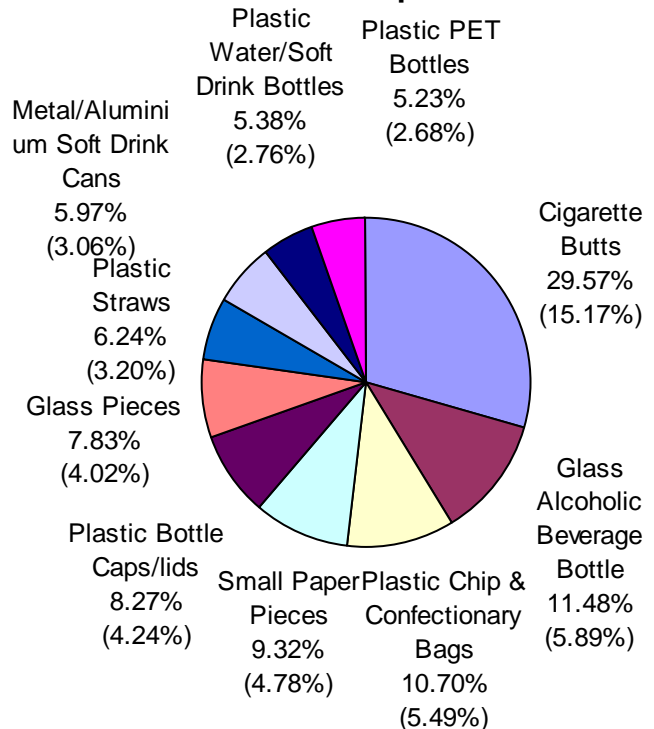
The Rubbish Report each year identifies the 'Ten Least Wanted Items'. This is a list of the ten most common things found, collected and surveyed on Clean Up Australia around the nation.

The pie chart shows the ten most common items surveyed on Clean Up Australia Day 2001. For each item its percentage contribution to the 'Top Ten' is shown as well as its percentage of the total rubbish surveyed (in brackets).

Of the 340,000 odd items surveyed on Clean Up Australia Day 2001 and used for analysis, cigarette butts were again the most common item counted. Over the years the same items continue to make the 'top ten', indicating our littering habits have not changed over the years with respect to these items. These 'ten least wanted items' in 2001 contributed to 51.3% of all items surveyed, 5% more than last year.

Cigarette butts account for nearly 30% of the top ten items and contributes 15.17% of the total items surveyed in 2001. The top six items are the same as in 2000 while plastic straws and plastic water and soft drink bottles have made their way into the 'top ten' again this year after an absence in 2000. Most of these items are recyclable and can be taken home and placed in kerbside recycling containers.

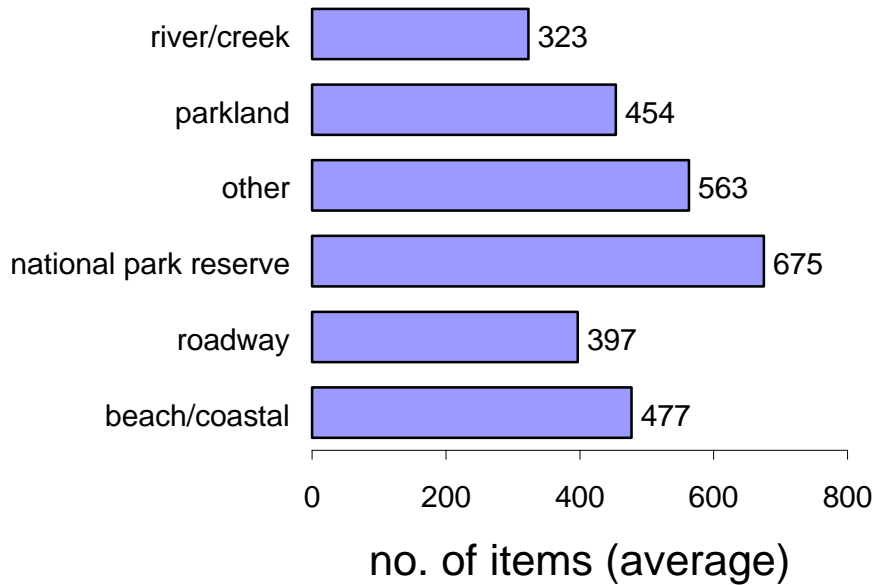
rubbish top ten



THE MOST POLLUTED AREAS IN AUSTRALIA

Statistical analysis of the surveyed data determined the average number of rubbish items surveyed per site, according to the site category (dual or multi site categories excluded). This analysis indicated that National park reserve sites were the most polluted with the highest average number of items (675) collected at these sites. This is a significant change from last year when National park reserve sites were the second least polluted. The next highest were Other sites, the highest polluted in 2000, followed by Beach/coastal, Parklands and Roadways, while River/creek sites had the least average number of items per site (323). This represents a change from previous years, where River/creek sites have been the second highest polluted.

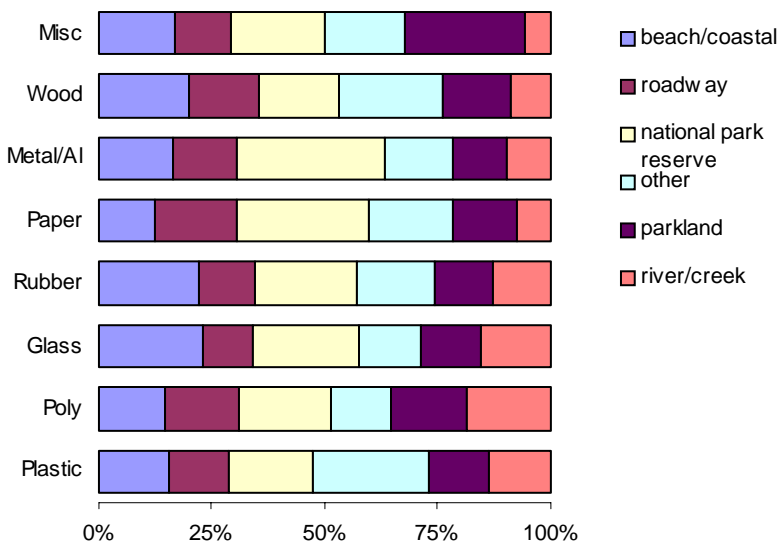
total rubbish distribution



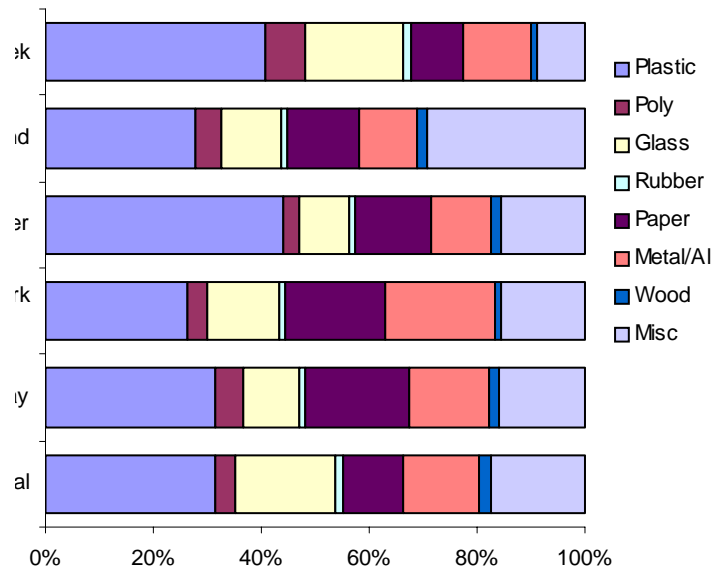
The composition of rubbish found at these sites is shown graphically. It compares the types of rubbish for each site category. Other sites have the largest proportion of plastic while Parklands have the highest proportion of miscellaneous rubbish. Rubber and wood both have minimal proportions of rubbish in all site categories.

The rubbish distribution by site category has also been analysed. The graph shows where each type of rubbish is more commonly found.

rubbish distribution by site type



site rubbish composition

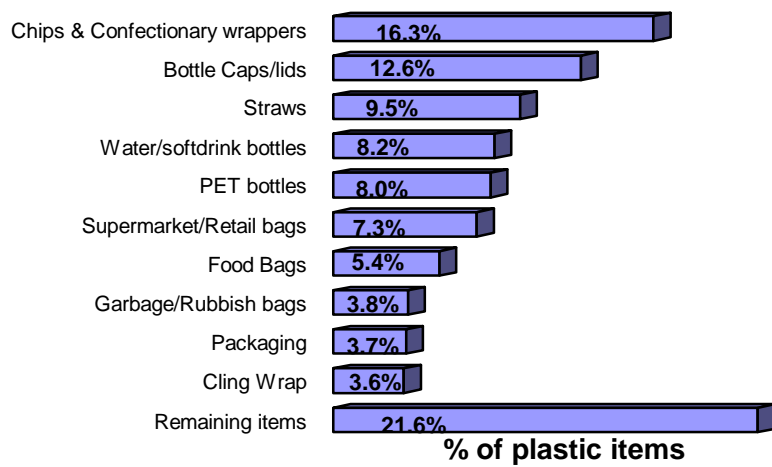


PLASTICS

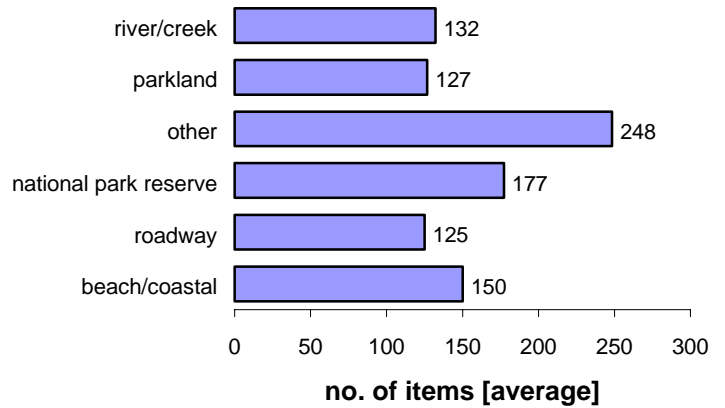
Plastics were again the most common material collected, representing 33.71% of the total rubbish surveyed. The most common plastic item this year was once again chip and confectionary bags, comprising 16.3% of the total plastic. This item came in at number three on 'the ten least wanted items' list and accounted for just over 5% of the total rubbish surveyed on Clean Up Australia Day.

Plastic bottle caps/lids, straws, water/soft drink and PET bottles also made the 'ten least wanted items' list. Nationally, each site had an average of 160 items. Other sites were the highest polluted by plastic, far above average with 248 items per site. National park reserve sites were the only other site category above average (177), while Beach/coastal sites were only just under average and Roadway, Parkland and River/creek sites had the least with around 130 plastic items each per site.

top ten plastic items



plastic rubbish distribution

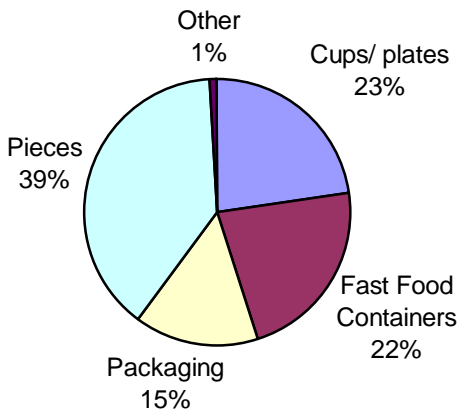


POLYSTYRENE

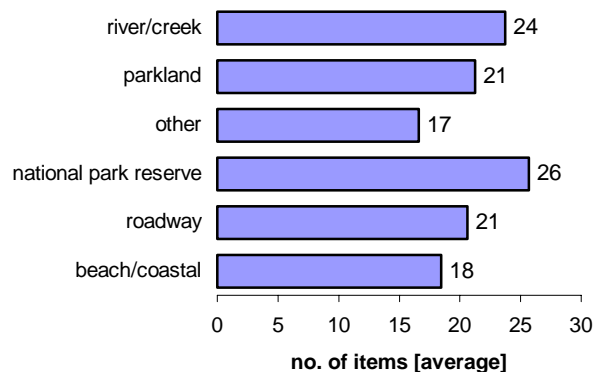
Polystyrene accounted for less than 5% of the total rubbish surveyed in 2001. Polystyrene pieces made up the bulk of polystyrene surveyed (39%), followed by cups/plates (23%) and fast food containers (22%).

Other sites were the least polluted by polystyrene items (17 per site), with National park reserve (28) and River/creek (24) sites having the most number of items per site.

types of polystyrene rubbish found



polystyrene rubbish distribution

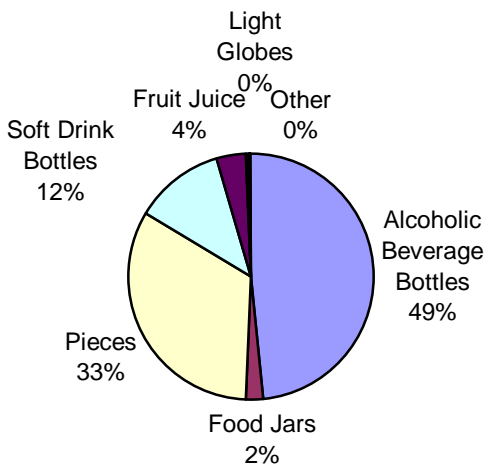


GLASS

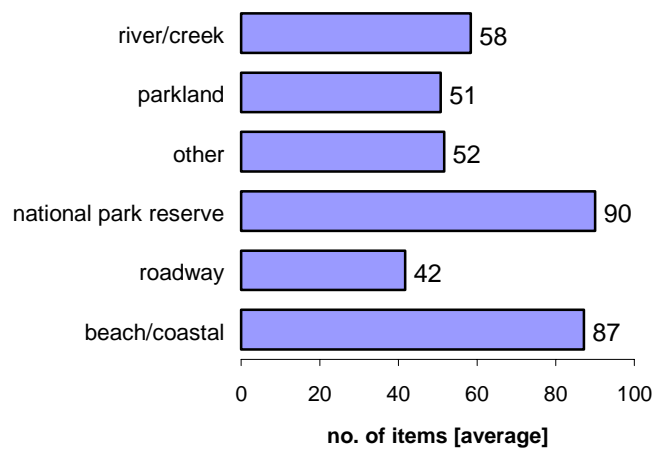
Glass items represented 12.10% of the total rubbish surveyed. Alcoholic beverage containers constituted just under half of the glass items (49%) surveyed and came in at number two in the 'ten least wanted items' making up 5.89% of the total items surveyed in 2001. Glass pieces were the next most common glass item (33%) and came in at number six in the 'ten least wanted items' list, making up 4.02% of the total items surveyed on the day.

National park reserve followed closely by Beach/coastal sites had the highest number of glass items with 90 and 87 items respectively per site. Roadway sites had 42 items per site on average, making them the least polluted sites by glass items. The national average number of glass items per site was 63 items.

types of glass rubbish found



glass rubbish distribution

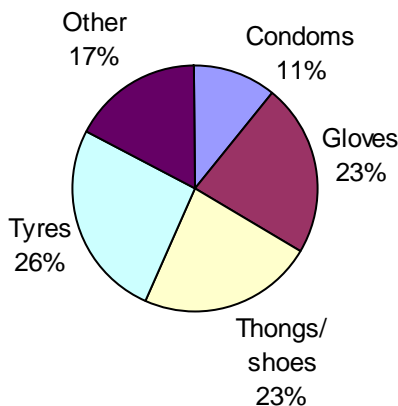


RUBBER

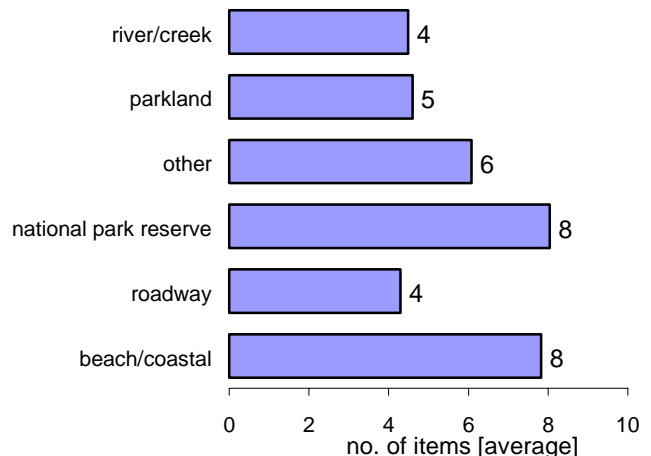
Rubber items were again the smallest source of rubbish surveyed on the day, comprising only 1.18% of the total rubbish. As in previous years tyres were the most common rubber item surveyed contributing 26% of the total rubber items, followed more closely this year by thongs/shoes and gloves, both contributing to 23% of the rubber items surveyed.

Less than ten rubber items were found on average at all site categories. National park reserve and Beach/coastal sites were the most likely places to find rubber items.

types of rubber rubbish found



rubber rubbish distribution



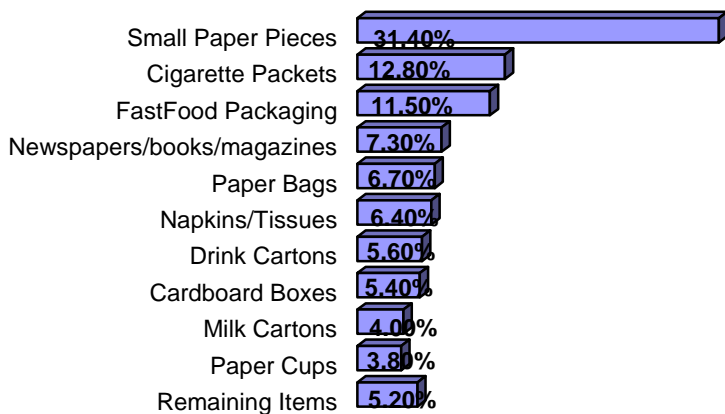
PAPER & CARDBOARD

Paper and cardboard items were the third largest rubbish source making up 15.23% of the total rubbish surveyed. The most common paper item was small paper pieces (31.4%) making up almost a third of all paper items, followed by cigarette packets (12.8%) and fast food packaging (11.5%).

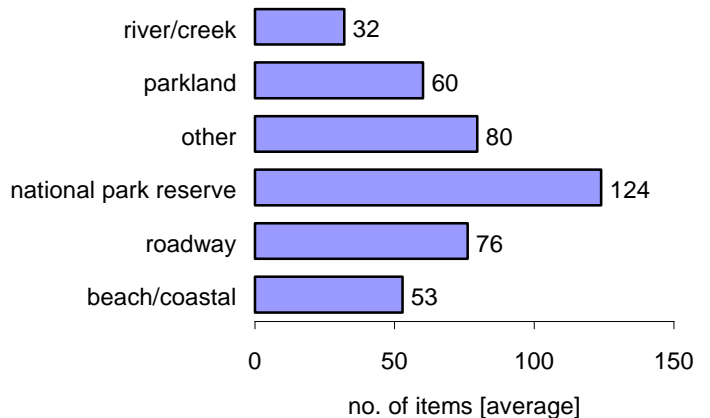
Small paper items also came in as the fourth most common item in the 'ten least wanted items' list, comprising 4.78% of the total rubbish surveyed.

The national average number of paper items per site was 71. National park reserve sites had a significantly higher average number of paper items with 122 paper items per site. River/creek sites were the least polluted by paper items with 32 items per site.

top ten paper & cardboard items



paper rubbish distribution

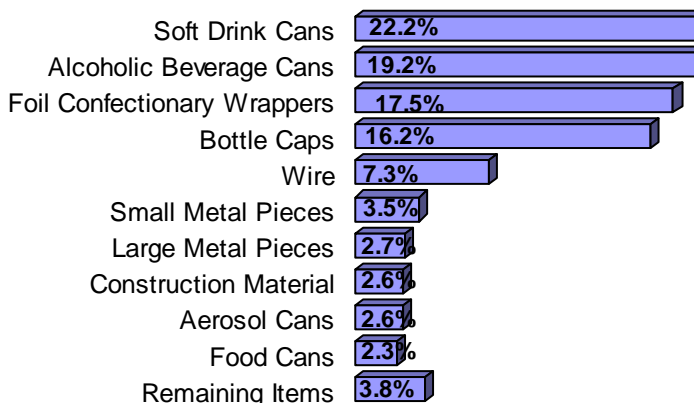


METAL & ALUMINIUM

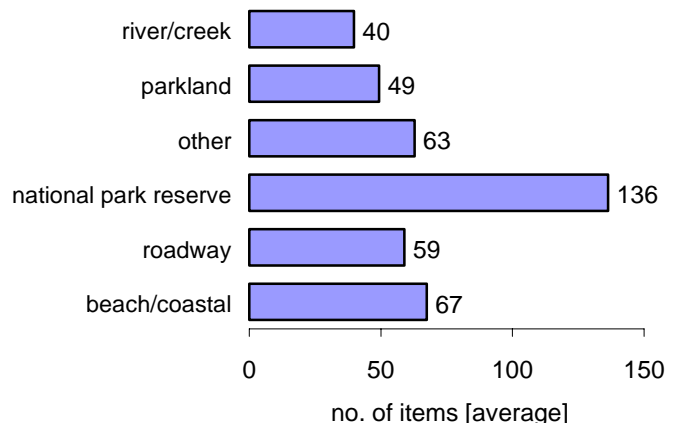
Rubbish items made of from metal and aluminium accounted for 13.79% of all items surveyed on the day. Aluminium soft drink cans (22.2%) were the most frequent item surveyed, followed by aluminium alcoholic beverage containers (19.2%), foil confectionary wrappers (17.5%) and bottle caps (16.2%), which accounted for 75.1% of all metal aluminium items with a significant decrease to other metal and aluminium items.

National park reserves had a significantly higher number of metal/aluminium items per site than the national average of 69 with around 140 items per site. All other sites were below the national average with river/creek sites (40) being the least polluted by metal/aluminium items.

top ten metal & aluminium items



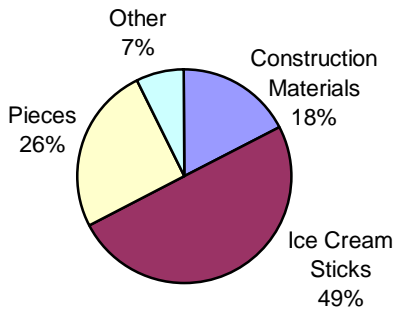
metal rubbish distribution



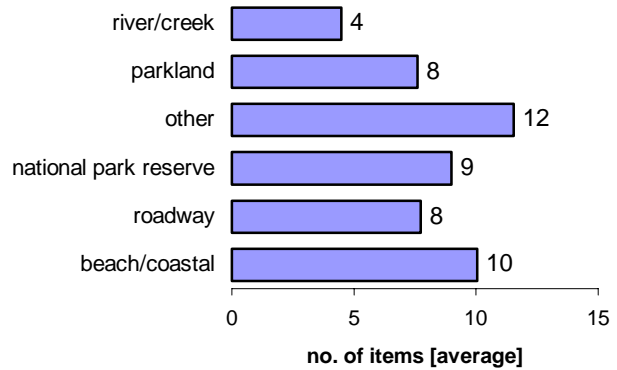
WOOD

1.97% of the total rubbish collected this year was wood items making it the second lowest source of rubbish surveyed on the day. Nearly half the wood items surveyed were ice cream sticks (49%), followed by wood pieces (26%), construction materials (18%) and other items (7%). All the site categories had less than 12 wood items per site with the national average only being 8 wood items per site.

type of wood rubbish found



wood rubbish distribution



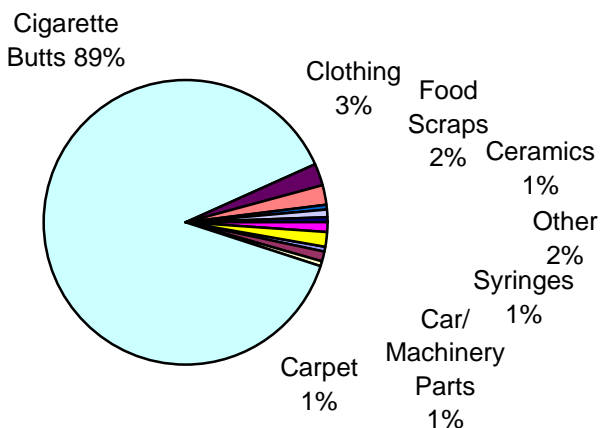
MISCELLANEOUS ITEMS

Miscellaneous rubbish includes items, which don't fit under the other material types on the survey report form. Included are items such as carpet, clothing, car parts, furniture, cigarette butts and syringes. The miscellaneous items were the second highest major source of rubbish accounting for 17.20% of the total rubbish surveyed. This is a significant increase from 2000 when they were the fourth most common rubbish source contributing 15.4%. Cigarette butts make up the majority of miscellaneous items (89%) and tops the 'ten least wanted items' list at 15.17% of the total number of rubbish items surveyed. This is a significant increase of nearly 3% from 2000 and 4.2% from 1999. The increase in cigarette butts this year possibly accounts for the overall increase of miscellaneous items as a rubbish source from last year.

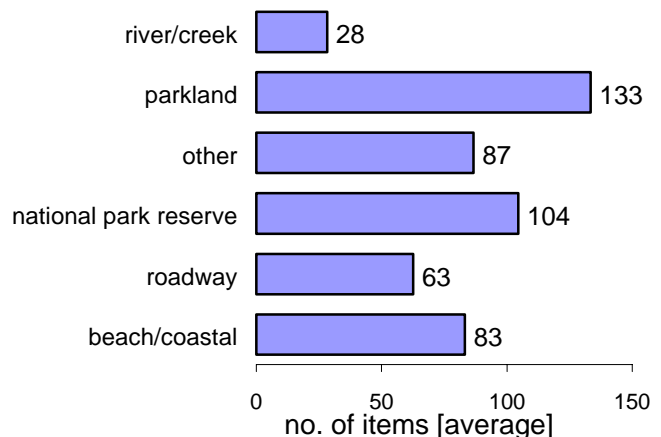
The most common sites to find miscellaneous items were Parkland sites with an average of 133 items per site, followed by National park reserve sites (104), while River/creek sites had only 28 items per site.

Parkland sites had 126 cigarette butts on average per site followed by National park reserve sites (83), Other (76), Beach/coastal (75), and Roadways (57) sites, while River/creek sites had the least number of cigarette butts with an average of 42 per site. This is quite different to last year where River/creek sites were the most polluted by cigarette butts with an average of 133 per site.

types of miscellaneous rubbish found



miscellaneous rubbish distribution



Yearly Comparison

National park reserves have undergone a significant increase in the average number of items per site in 2001 compared to 2000. After comparing the average number of individual rubbish items for national park reserves in 2000 and 2001, four items were found to have increased significantly in 2001 that account for an increase of 204 items per site for National park reserve sites. These four items are glass alcohol bottles (increase of 47 bottles per site), small paper pieces (increase of 59 pieces per site), metal wire (increase of 50 metres per site) and cigarette butts (increase of 49 butts per site). These items appear to be responsible for the increase in the average number of items collected per site for this site category.

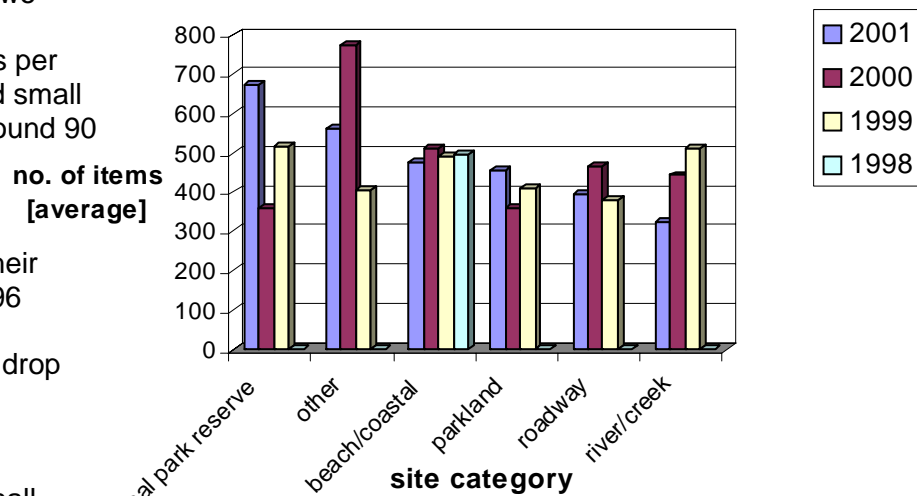
Other sites in 2001 have undergone a decrease from 2000 of around 220 items per site. After comparing the average number of individual items for Other sites in 2000 and 2001, two items were found to have decreased significantly in 2001 by around 180 items per site. These were Large metal pieces and small metal piece, each having dropped by around 90 items each.

River/creek sites have also decreased their average number of items from 2000 by 96 items per site. There were no significant rubbish items that could account for this drop and could only be attributed to general decreases over all the items collected. Although not significant, some items did decrease in 2001 compared to 2000. Small paper pieces dropped by 25 items per site, soft drink cans by 12 items, and metal bottle caps by 9 items, while glass pieces increased by 22 items.

The sources of rubbish have remained fairly constant over the last few years with fluctuations from 2000 to 2001 being no greater than 3% of total rubbish for each rubbish type. Metal/aluminium as a major source of rubbish appears to have decreased by 3% of the total rubbish. After comparing the percentage of total rubbish of each metal/aluminium item for 2000 and 2001 it was found that two items were responsible for a decrease of 2.7% from 2000 to 2001. Small metal pieces decreased from 1.89% of total rubbish in 2000 to 0.49% in 2001, an overall decrease in the metal/aluminium rubbish source as a percentage of total rubbish by 1.4%. Large metal pieces decreased from 1.65% in 2000 to 0.37% in 2001, decreasing the Metal/aluminium rubbish source's percentage of total rubbish by 1.3%. Combined, these two items account for the 2.7% of total rubbish decrease for metal/aluminium in 2001.

Miscellaneous rubbish has increased by 3% from last year. As cigarette butts increased by around 3% of total rubbish this year, the increase can be attributed to this.

comparison of average no. of items per site



comparison of major rubbish source over past years

