

NATIONAL MARINE DEBRIS DATA BASE: FINDINGS  
ON BEACH DEBRIS REPORTED BY CITIZENS

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ABSTRACT

The Center for Marine Conservation (CMC) has established a National Marine Debris Data Base to involve citizens in the collection of standardized information on marine debris. This information collected over time will serve as a means to monitor legislative and other efforts to reduce marine debris.

During the first year of this program, more than 47,500 volunteers in 25 U.S. states and territories recorded detailed information on types and quantities of debris collected during one 3-h period in the fall of 1988. All completed data cards were returned to CMC for analysis.

The data showed that approximately 62% of the 1,973,995 debris items reported were plastic. The most common debris items were fragmented pieces of plastic and foamed plastic (Styrofoam-like). More than 56% of all debris was packaging and disposable plastic products that can be generated by a diversity of ocean- and land-based sources. Using indicator items it was found that approximately 8% of all debris reported was indicative of dumping of galley wastes by vessels, 2% was operational wastes generated during activities conducted by cargo vessels and offshore petroleum operations, 6% was fishing and boating gear, and 0.4% was sewage-associated wastes indicative of inadequate sewage treatment practices. The presence of these indicator items suggests that some of the untraceable debris items may also be generated by these sources. Only 0.09% of the debris was categorized as medical wastes suspected to be from illegal dumping, storm water runoff, or inadequate sewer systems. More than 1,000 debris items from 45 countries were reported, in addition to items traceable to 10 cruise line companies. Volunteers also reported finding more than 45 cases of wildlife entanglement or ingestion of debris, most of which were birds entangled in plastic fishing line.

## INTRODUCTION

More than 47,500 U.S. citizens participated in the first national volunteer effort to categorize the types and quantities of marine debris found in U.S. coastal areas. Information from this citizen monitoring effort was compiled by the Center for Marine Conservation (CMC)--formerly the Center for Environmental Education--in the National Marine Debris Data Base. The data base was established to gather and analyze information collected by citizens at beach cleanups conducted as part of the annual Coastweeks celebration each fall. Sponsored by the U.S. Environmental Protection Agency (EPA), National Oceanic and Atmospheric Administration, and the U.S. Coast Guard, the data base was established to utilize the efforts of citizen volunteers to identify specific debris problems in different parts of the country and to monitor the effectiveness of Annex V and other measures implemented to reduce debris. This paper presents information on how the data base was organized and national findings on the types of debris reported the first year. Detailed information on the types of debris reported and analyzed on the national, state, and local level is available from the CMC in a report entitled "Cleaning America's Beaches: 1988 National Beach Cleanup Results."

## METHODS

Since 1986, the CMC has compiled extensive information on the types and quantities of marine debris found on the Texas coastline using data collected by citizens during volunteer beach cleanups. Based on these data findings, the CMC has published two reports on the debris problem in Texas which include documentation on the sources of debris and recommendations for Federal, state, and local governments, industry, and other groups to reduce the marine debris problem (Center for Environmental Education 1987, 1988).

In 1988, using the Texas data collection system as a model, the CMC initiated the first national data collection effort. After contacting all coordinators that planned to conduct beach cleanups during Coastweeks '88 (17 September-10 October), 25 states agreed to participate in a national data collection effort. For many of these states, 1988 would be their first cleanup effort and coordinators were eager to obtain information on the types and quantities of debris found on their coastlines. The timing of this national event was also important since the data collected would establish a baseline of information on beach debris prior to the enactment of MARPOL Annex V on 31 December 1988.

In order to produce a data card that would be representative of the types of beach debris found nationwide, the CMC requested comments from beach cleanup organizers as to what types of debris were prevalent on their coastline and what information was needed to evaluate the debris problem on the state and local levels. The CMC had previously developed a data card for use in Texas that reflected the great diversity of debris known to occur on the Texas coastline. (Due to circulation patterns in the Gulf of Mexico, Texas beaches receive the brunt of debris dumped into the Gulf.) Because of this diversity of debris, the Texas data card served as

## BEACH CLEANUP DATA CARD

Thank you for completing this data card. Answer the questions and return to your area coordinator or to the address at the bottom of this card. This information will be used in the Center for Environmental Education's National Marine Debris Data Base and Report to help develop solutions to stopping marine debris.

Name \_\_\_\_\_ Affiliation \_\_\_\_\_  
 Address \_\_\_\_\_ Occupation \_\_\_\_\_ Phone (\_\_\_\_\_) \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_ M \_\_\_\_\_ F \_\_\_\_\_ Age \_\_\_\_\_  
 Today's Date Month \_\_\_\_\_ Day \_\_\_\_\_ Year \_\_\_\_\_ Name of Coordinator \_\_\_\_\_  
 Location of beach cleaned \_\_\_\_\_ Nearest city \_\_\_\_\_  
 How did you hear about the cleanup? \_\_\_\_\_

**SAFETY TIPS**

1. Do not go near any large drums.
2. Be careful with sharp objects.
3. Wear gloves.
4. Stay out of the dune areas.
5. Watch out for snakes.
6. Don't lift anything too heavy.

**WE WANT YOU TO BE SAFE**

Number of people working together on this data card \_\_\_\_\_ Estimated distance of beach cleaned \_\_\_\_\_ Number of bags filled \_\_\_\_\_  
 SOURCES OF FOREIGN DEBRIS. Please list all items that have foreign labels

Country	Item Found
Example: <i>Mexico</i>	<i>plastic bottle - "Clarisol"</i>

STRANDED AND/OR ENTANGLED ANIMALS (Please describe type of animal and type of entangling debris. Be as specific as you can.)  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

What was the most peculiar item you collected? \_\_\_\_\_  
 Comments \_\_\_\_\_  
 \_\_\_\_\_

Thank you!

PLEASE RETURN THIS CARD TO  
 YOUR AREA COORDINATOR  
 OR MAIL IT TO:  
**Center for Environmental Education**  
 1725 DeSales Street, NW  
 Washington, DC 20036  
 A Membership Organization



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Figure 1.--Beach cleanup data card, sides 1 and 2.

### ITEMS COLLECTED

You may find it helpful to work with a buddy as you clean the beach, one of you picking up trash and the other taking notes. An easy way to keep track of the items you find is by making tick marks. The box is for total items; see sample below.

egg cartons HTI HTI HTI I Total  cups HTI HTI HTI HTI HTI HTI Total

**PLASTIC** Total number of items

bags:

trash

salt

other

bottles:

beverage, soda

bleach, cleaner

oil, lube

other

buckets

caps, lids

cups, spoons, forks, straws

diapers

disposable lighters

fishing line

fishing net:

longer than 2 feet

2 feet or shorter

floats & lures

hardhats

light sticks

milk, water gallon jugs

pieces

pipe thread protector

rope:

longer than 2 feet

2 feet or shorter

sheeting:

longer than 2 feet

2 feet or shorter

6-pack holders

strapping bands

syringes

tampon applicators

toys

vegetable sacks

"write protection" rings

other (specify)

**GLASS**

bottles:

beverage

food

other (specify)

fluorescent light tubes

light bulbs

pieces

other (specify)

**STYROFOAM®** (or other plastic foam) Total number of items

buoys

cups

egg cartons

fast-food containers

meat trays

pieces:

larger than a baseball

smaller than a baseball

other (specify)

**RUBBER**

balloons

gloves

tires

other (specify)

**METAL**

bottle caps

cans:

aerosol

beverage

food

other

crab/fish traps

55 gallon drums:

rusty

new

pieces

pull tabs

wire

other (specify)

**PAPER**

bags

cardboard

cartons

cups

newspaper

pieces

other (specify)

**WOOD** (leave driftwood on the beach)

crab/lobster traps

crates

pallets

pieces

other (specify)

**CLOTH**

clothing/pieces

(OVER)

Figure 1.--Continued.

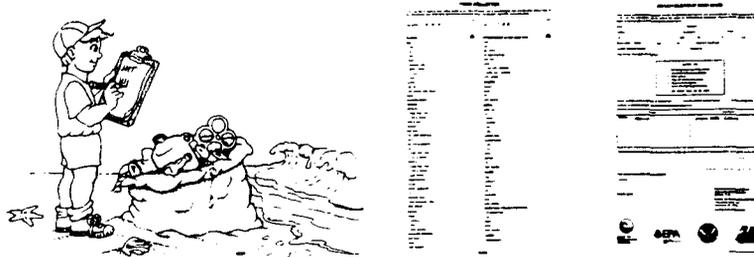
## A GUIDE TO GOOD DATA COLLECTION

When you help at a beach cleanup, you'll be asked not only to remove marine debris, but to record on Data Cards the kinds and amounts of trash you find.

The information you record on these cards will be used by The Center for Environmental Education (CEE) in a national marine debris study to help policy makers on the state, federal and international levels develop solutions to ending the serious marine debris problems facing all coastal states.

Data collected since 1986 and analyzed by CEE has been used in reports, in testimony on Capitol Hill and at the International Maritime Organization meetings in London to determine how plastic trash will be handled by ships at sea and at ports all around the world.

### DATA COUNTS! . . . YOUR HELP WILL MAKE A DIFFERENCE!



### HELPFUL TIPS FOR DATA COLLECTORS:

1. Count items in groups of five like this  , and record the total in the box.
2. Do not write the words "Lots" or "Many". Only numbers of items can be put into the computer.
3. Stranded Animals: In this section, please list animals you find stranded or dead on the beach and, if possible, any entangling debris items.
4. Sources: In this section, please list foreign items found and country, if identifiable.
5. Please leave natural items on the beach like driftwood, sea whip and seaweed. Avoid stepping on dune grass and plants. These things hold the sand and prevent erosion.
6. Work with a few people, have one person record the numbers while others collect and bag the trash.
7. Please return your data card to your area coordinator so that all your data will be added to state and national totals.



### National Marine Debris Data Base Sponsored By:



Copyright 1988, Center for Environmental Education, Inc.

Return this card for future use

Figure 2.--Guide used by volunteers for data collection, sides 1 and 2.

# GUIDE TO MARINE DEBRIS

The best data recording can be done if you know what the items listed on your cards look like.



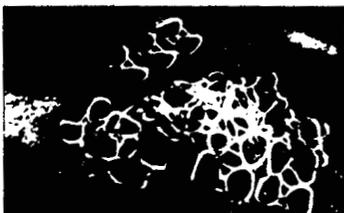
Here are some examples of unusual items you may find.



**Light Sticks.** Listed under plastic, these clear plastic tubes about 6 inches long are mostly used by fishermen. When new, the liquid will glow in the dark and attract fish to baited hooks.



**Write Protection Rings.** Listed under plastic, these are used on computer tapes on ships doing seismic testing.



**6-Pack Rings.** Listed under plastic, these items are used to hold cans.



**Wooden Pallets.** Listed under wood, these items are used to help stack and transport cargo.



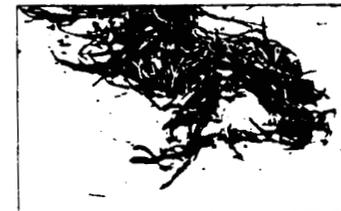
**Strapping Bands.** Listed under plastic, these strong, narrow, light-weight plastic bands are used to bind materials and boxes.



**55 Gallon Drums.** Listed under metal, these drums could contain dangerous chemicals. Do not go near a drum because the vapor or liquid could hurt you.



**Vegetable Sacks.** Listed under plastic, these large mesh bags are used to hold bulk quantities of onions, potatoes, or fruit.



**Sea Whip.** This yellow, orange or purple colony of animals is long, thin and has a dark string-like core. This may look like wire or rope, but it is a natural item found from North Carolina to the Gulf of Mexico. Please leave this on the beach.

## FOR YOUR SAFETY

Do not approach any 55 gallon drums. They may contain dangerous liquids. Even the vapor could harm you. Leave the drum, but record it on your card.

Do not go into the dunes: snakes may be there.

Be very careful of broken glass and other sharp objects.

Wear gloves.

Don't lift anything heavy.



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**THANK YOU** for your help and interest in keeping the coast and ocean safe for all of us and for marine wildlife!

Figure 2.--Continued.

an important model for the subsequent development of a system for categorizing and classifying beach debris on a national level.

The resulting data card was divided into eight major category types-- plastic, glass, Styrofoam, metal, rubber, paper, wood, and cloth (Fig. 1). ("Styrofoam" was used instead of the more technical term "foamed plastic" because it was felt that volunteers would more readily recognize this term.) In total, the data card listed 64 types of debris items. In addition, for each major category there was a listing for "other" to ensure that items not listed on the data card were recorded. Data cards also requested specific information on the sources of foreign debris items as indicated by product labels or other markings, observations of entangled or stranded marine wildlife, observations of peculiar debris items, and comments from volunteers.

With funding from the EPA, the CMC distributed 43,000 data cards to cleanup organizers in the 25 participating states and territories. One thousand additional data cards in the Spanish language were sent to Puerto Rico.

The CMC also developed and distributed 43,000 copies of a 1-page guide for data collection (Fig. 2). The guide gave information on how to use the data card, identified certain debris items that might not be familiar to volunteers, and explained how this information would be used to compile a national assessment of beach debris. Volunteers were encouraged to work in pairs during the cleanup--one person to pick up trash while the other recorded debris.

Each state beach cleanup coordinator was responsible for distributing the data cards and guides to their volunteers and for returning all completed data cards to the CMC for data entry and analysis. All data were then entered into the CMC's National Marine Debris Data Base and analyzed on the basis of national, state, and local findings.

### FINDINGS

More than 47,500 volunteers participated in beach cleanups in 1988 in 25 U.S. states and territories (Table 1). One 3-h cleanup was conducted in every coastal state. While the data collected from these cleanups provided a means to assess the debris problem in marine areas, it also provided interesting insights into the extent of the debris problem in inland waters of the United States.

Beach cleanup volunteers covered more than 5,600 km (3,500 mi) of U.S. shorelines and collected nearly 1,000 tons of debris. The methods used to weigh debris varied from state to state, and therefore the weight of debris collected is not exact. However, it is of interest to note that the greatest amount of trash per mile of beach was reported in the states bordering the Gulf of Mexico, particularly Louisiana, Mississippi, and Texas.

On analyzing the data cards, it became obvious that the number of debris items recorded was only an estimate of the true amounts. Some

Table 1.--Number of volunteers, distance cleaned, and amount of debris collected during 1988 beach cleanups (asterisk indicates information not available).

State	Number of volunteers		Distance cleaned		Debris collected		Debris per mile	
		(miles)	(kilometers)	(pounds)	(kilograms)	(pounds)	(kilograms)	
Alabama	630	40	64	8,340	3,786	208.50	94.66	
Alaska	238	10+	16+	10,300+	4,676+	*	*	
California	5,700	1,100	1,770	200,000	90,800	181.82	82.55	
Connecticut	14	2	3	190	86	95.00	43.13	
Delaware	650	54	87	6,054	2,749	112.11	50.90	
Florida	10,676	914.6	1,471.6	388,000	176,152	424.23	192.60	
Georgia	268	50	80	200,000	90,800	4,000.00	1,816.00	
Hawaii	3,037	102.8	165.4	100,000	45,400	972.76	441.63	
Louisiana	2,700	77	124	180,000	81,720	2,337.66	1,016.30	
Maine	1,410	114	183	15,200	6,901	133.33	60.53	
Maryland	171	18	29	3,750	1,702	208.33	94.58	
Massachusetts	2,200	150	241	50,000	22,700	333.33	151.33	
Mississippi	1,200	30	48	90,000	40,860	3,000.00	1,362.00	
New Jersey	250	15.4	24.8	10,021	4,550	652.41	296.19	
New York	150	4.2	6.7	4,560	2,070	1,085.71	492.91	
North Carolina	3,500	150	241	94,000	42,676	626.67	284.51	
Oregon	2,200	120	193	28,400	12,894	236.67	107.51	
Pennsylvania	174	7	11	2,445	1,110	349.28	158.57	
Puerto Rico	407	17.3	27.8	12,640	5,739	730.64	331.71	
Rhode Island	500	100	161	15,000	6,810	150.00	68.10	
South Carolina	3,000	198	319	30,000	13,620	151.52	68.79	
Texas	5,987	120.6	194.0	428,000	194,312	3,548.92	1,611.21	
Virginia	130	19.8	31.9	12,900	5,857	651.51	295.79	
Virgin Islands	435	3.2	5.1	*	*	*	*	
Washington	1,904	100+	161	64,000	29,056	540.00+	245.16+	
Total	47,531	3,517.84	5,660.2	1,953,800	887,025			

volunteers did not count debris items but only commented on the tremendous amounts of debris found. In cases where actual counts were not made, the cards were not added to the data base. But for the most part, volunteers made deliberate and careful efforts to record information. Some who could not identify certain debris items actually sent this trash to the CMC for identification.

Understandably, data collected during volunteer beach cleanups are highly variable and therefore cannot be interpreted exactly, but beach cleanup data can reveal important trends in the relative types, quantities, and distribution of debris. For instance, the data showed that most of the debris found on our nation's coastline is plastic (including Styrofoam). The amount of plastic debris reported surpassed all other categories, accounting for 1,222,708 of the 1,973,995 debris items reported, or approximately 62% (Fig. 3). The remaining debris items consisted of approximately 11.8% paper, 11.4% metal, 9.5% glass, 2.3% wood, 1.8% rubber, and 1.3% cloth. This abundance of plastic debris is also apparent on the state level (Table 2).

The most common debris items reported nationwide were fragmented pieces of plastic and foamed plastic (Styrofoam-like). The data indicate that these plastic pieces accounted for more than 13% of all debris reported. The 12 most common debris items recorded were plastic eating utensils, metal beverage cans, foamed plastic cups, glass beverage bottles, plastic caps and lids, paper pieces (or fragments), plastic trash bags, miscellaneous types of plastic bags (other than trash or salt bags), glass pieces (or fragments), and plastic soda bottles. Collectively, these 12 debris items constituted more than 56% of all debris items recorded (Table 3). Other debris items reported in abundance included approximately 42,700 metal bottle caps, 30,800 plastic six-pack connector rings for

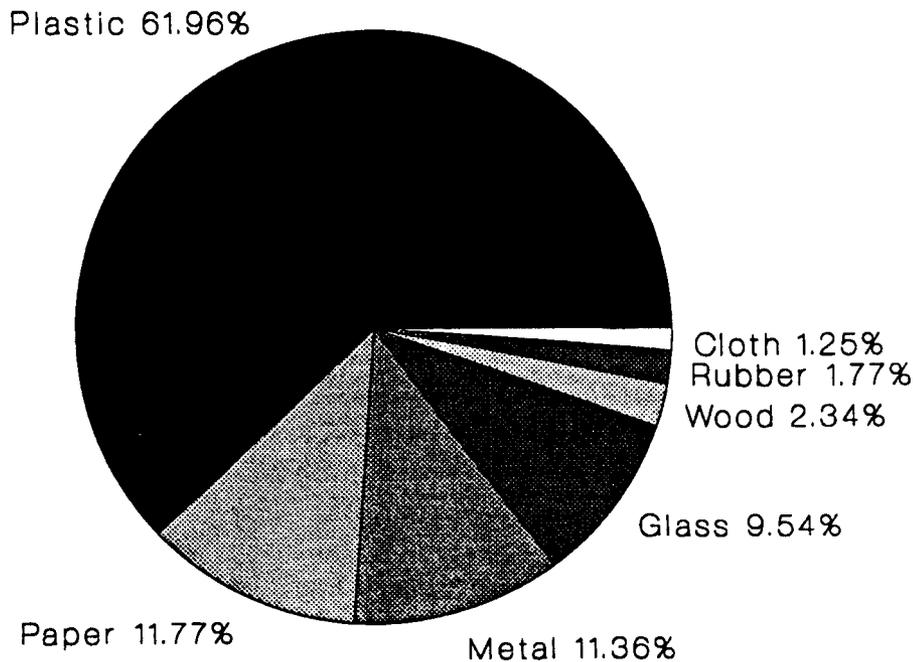


Figure 3.--National composition of debris reported.

Table 2.--Composition of total debris reported  
during 1988 beach cleanups.

Percent of total debris collected							
	Plastic	Metal	Paper	Glass	Wood	Rubber	Cloth
National	61.94	11.36	11.77	9.54	2.34	1.80	1.25
By state							
Alabama	63.48	10.81	10.58	10.21	1.87	1.90	1.15
Alaska	56.45	17.83	6.04	15.79	1.21	1.77	0.91
California	47.97	12.11	19.43	15.86	1.42	2.04	1.19
Connecticut	65.99	7.85	7.70	10.54	3.51	2.69	1.72
Delaware	56.82	15.16	14.02	6.78	2.60	2.88	1.76
Florida	59.67	13.31	11.35	10.27	2.72	1.34	1.33
Georgia	57.42	21.13	7.12	9.26	1.99	1.98	1.10
Hawaii	52.14	11.86	16.70	14.54	1.36	2.22	1.19
Louisiana	74.42	7.37	3.58	9.32	1.71	1.87	1.74
Maine	59.69	10.85	12.38	9.74	2.30	3.60	1.45
Maryland	55.79	21.54	7.38	9.10	2.15	2.59	1.46
Massachusetts	61.03	11.40	14.17	7.06	2.49	2.29	1.56
Mississippi	66.29	12.49	7.45	9.63	2.21	1.08	0.85
New Jersey	94.53	1.66	2.47	0.13	0.13	0.85	0.22
New York	77.63	8.99	6.59	4.15	1.02	0.74	0.88
North Carolina	51.81	13.62	20.23	7.22	4.10	1.63	1.39
Oregon	70.16	5.62	14.98	4.85	1.72	1.60	1.10
Pennsylvania	55.85	10.33	22.92	5.19	1.20	2.35	2.17
Puerto Rico	43.36	19.08	11.54	22.09	2.29	0.58	1.05
Rhode Island	60.63	13.20	13.34	6.96	1.26	3.34	1.26
South Carolina	58.86	11.82	16.71	5.81	4.00	1.69	1.11
Texas	76.54	6.73	3.87	8.58	1.63	1.60	1.05
Virginia	61.42	10.65	8.80	8.87	4.29	4.74	1.22
Virgin Islands	60.36	15.23	6.39	13.12	2.44	1.14	1.33
Washington	57.46	7.12	24.58	8.12	1.24	1.07	0.41

beverage cans, 27,600 small pieces of plastic sheeting, 25,200 paper cups, 22,500 foamed plastic fast-food containers.

This information indicates that the majority of debris items found on U.S. shorelines are packaging and disposable plastic products that can be generated by a diversity of ocean- and land-based sources. Certain items, however, are traceable to specific debris sources, and can be used as "indicators" of dumping by maritime and other groups. These indicator items were first identified by the CMC in 1986 with the assistance of the Texas Coastal Cleanup Steering Committee, which included representatives of marine industry groups familiar with the types of debris that could be generated by industry members.

Table 3.--Twelve most common debris items reported during 1988 beach cleanups.

Debris item	Total number reported	Percent of total debris collected
Plastic pieces (or fragments)	134,685	6.82
Small foamed plastic (Styrofoam) pieces	125,725	6.37
Plastic cups, spoons, forks, and straws	112,465	5.70
Metal beverage cans	99,847	5.06
Foamed plastic (Styrofoam) cups	95,807	4.85
Glass beverage bottles	95,028	4.81
Plastic caps and lids	90,998	4.61
Paper pieces	85,864	4.35
Plastic trash bags	78,025	3.95
Miscellaneous types of plastic bags	74,672	3.78
Glass pieces	65,819	3.33
Plastic soda bottles	58,116	2.94
Total	1,117,051	56.59

Using this information, 28 indicator items were identified which fall under four categories: 1) galley wastes generated by crew members on vessels, 2) operational wastes generated during activities conducted by cargo vessels and offshore petroleum operations, 3) fishing and boating gear, and 4) sewage-associated wastes indicative of inadequate sewage treatment practices. Table 4 lists the debris items included under each of these categories. A fifth category, medical wastes, was also identified using plastic syringes as the indicator item. Although the source of syringes as beach debris has not been clearly identified, syringes are suspected to be from illegal dumping, storm water runoff, or inadequate sewer systems.

These 28 indicator items accounted for more than 16% of the debris reported nationwide, with approximately 8% galley wastes, 6% attributable to recreational and commercial fishing and boating, and 2% operational-type wastes. Sewage-associated wastes and medical wastes were comparatively less common, accounting for 0.4 and 0.09% respectively. This information should not be interpreted to mean that these are the only wastes generated by specific ocean- and land-based sources. Rather, the presence of indicator items may show that some of the untraceable debris items are also generated by these same sources.

Furthermore, comparisons of indicator items on the state level showed regional differences in the amount of debris traceable to these sources. For instance, the amounts of galley and operational-type wastes found in states bordering the Gulf of Mexico were much higher than the national figures. On the other hand, while offshore-generated wastes were notably absent on inland beaches on Lake Erie, Pennsylvania, the amount of sewage-associated wastes reported from the Pennsylvania cleanup was six times

Table 4.--Categories and quantities of indicator items used for national assessment of debris reported during 1988 beach cleanups.

Category	Indicator items	Total number reported
Galley wastes	Plastic trash bags	78,025
	Plastic milk and water gallon jug	26,148
	Plastic bleach, cleaner bottles	19,300
	Foamed plastic meat trays	14,721
	Foamed plastic egg cartons	9,526
	Plastic vegetable sacks	6,770
Subtotal		154,490 (7.83%)
Fishing or boating gear	Plastic rope	47,786
	Plastic fishing line	16,563
	Plastic oil and lubricant bottles	12,002
	Plastic light sticks	9,307
	Plastic fishing nets	8,136
	Foamed plastic buoys	7,876
	Plastic floats and lures	5,980
	Rubber gloves	5,748
	Plastic salt bags	3,797
	Wooden fish and crab traps	1,309
	Metal fish and crab traps	1,281
Subtotal		119,785 (6.07%)
Operational wastes	Plastic strapping bands	11,665
	Plastic sheeting longer than 60 cm (2 ft)	7,383
	Glass light bulbs	6,905
	Plastic pipe thread protectors	5,084
	Write-enable protection rings	3,054
	Fluorescent light tubes	2,209
	Wooden pallets	1,737
	Wooden crates	1,075
	Plastic hardhats	857
Subtotal		39,969 (2.03%)
Sewage-associated wastes	Plastic tampon applicators	7,584 (0.38%)
Medical wastes	Plastic syringes	1,718 (0.09%)
Total number of indicator items		343,546 (16.39%)

greater than the national figure, indicating that inadequate sewer systems were a problem in this area.

By noting product labels and other markings, volunteers also reported more than 1,000 foreign label items from 45 countries. In addition, debris from 10 cruise line companies was reported.

Finally, during the 3-h beach cleanup, volunteers reported finding more than 45 cases of wildlife entanglement or ingestion of debris. Of these, more than 40 were birds, most of which were entangled in plastic fishing line.

### DISCUSSION

Due to the diversity of debris items and their multiple uses, data collected during beach cleanups cannot realistically be used to estimate total amounts of debris found in marine areas or the exact sources of debris items. However, comparison of relative amounts of debris can reveal important national, state, and local trends in the types and distributions of beach debris. In particular, the first year of the National Marine Debris Data Base demonstrated that plastics account for the majority of waste on our nation's shorelines. Having established a baseline of information on the types and quantities of plastic waste, future beach cleanups can help to monitor legislative and other efforts to control the discharge of plastic trash into marine areas.

By monitoring the presence of indicator items, citizen beach cleanups can also serve to identify what groups are not complying with offshore dumping regulations. This type of information is especially important for developing solutions to the debris problem on the state and local levels.

The great majority of items reported during beach cleanups, however, are virtually untraceable to their specific sources. Yet this information contributes greatly to the underlying theme of a beach cleanup--increased awareness. Since much of this debris consists of items that are used by the general public, those who participate in beach cleanups learn that marine industries are not the only sources of marine debris and that the solution lies with us all. Others who do not participate in beach cleanups hear about data results in the press and media and may consider proper disposal of their trash. Finally, it is hoped that those who manufacture or distribute products that are reported as debris will realize the need to initiate and support efforts that encourage proper disposal and prevent these items from becoming debris.

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