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Thursday, February 16, 2012

201 AN EDITION OF THE San Jose Mercury News \$1.00
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DELUGEOFGARBAGE POLLUTINGS F. BAY

100,000 bags of trash enter the bay annually

Equivalent to filling a football field 3 feet deep with trash.

As cities work to meet state cleanup requirements, study shows San Jose and Oakland are worst litter offenders

By Paul Rogers

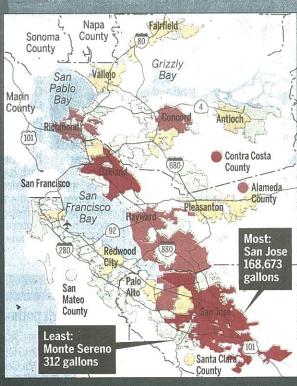
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Bay Area residents pollute San Francisco Bay every year with enough trash to fill 100,000 kitchen garbage bags, according to the first comprehensive study of the volume of litter flowing into the bay.

The tidal wave of fast-food wrappers, plastic bottles, paper bags and cigarette butts rolls across the land-scape and into storm drains, where the garbage washes into creeks and the bay during wet weather. Although it may not be surprising that because of their size San Jose and Oakland pollute the most, tiny Colma in San Mateo County and a host of East Bay cities, including Pittsburg, El Cerrito and Richmond, are among the areas that add the most litter per capita, according to an analysis by this newspaper.

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Online extra: View a database of how much trash enters San Francisco Bay at www.mercurynews.com/science.



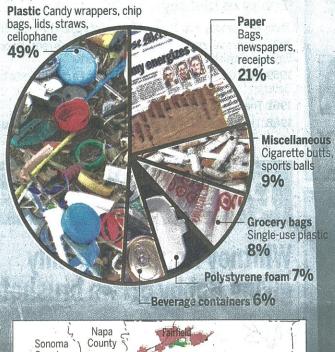
Trash by volume

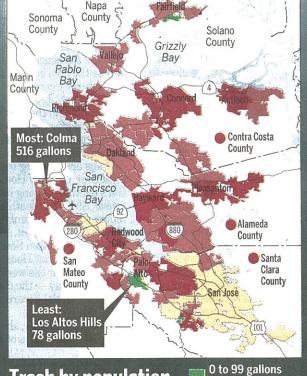
Estimated annual gallons of trash entering Bay Area creeks via storm drain system 320 to 20,000 gallons 20,000 to 39,999

40,000 to 59,999 60,000 and up

Where the trash comes from

A new study estimates that every year 1.36 million gallons of trash flow into San Francisco Bay and its creeks from storm drains. A breakdown of trash sources:





Trash by population

Taking account of a city's population. Estimated annual gallons of trash entering Bay Area creeks via storm drain system per 1,000 people. 0 to 99 gallons per person
100 to 199
200 to 299
300 or more

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NOTE: San Francisco, Sonoma, Marin and Napa counties are excluded from the survey. Source: Bay Area Stormwater Management Agencies Association. Image by istockphoto.com

Trash

Continued from Page 1

"This is 100 percent preventable. Trash doesn't happen by itself. If we can get people to modify their behavior, we'll make huge gains," said Geoff Brosseau, executive director of the Bay Area Stormwater Management Agencies Association, the Menlo Park group that compiled the report.

The study is part of a massive effort to clean up trash in bay waters. In 2009, state regulators required cities and counties to reduce the amount of trash going into the bay by 40 percent by 2014 or face fines, with a goal of reducing it 100 percent by

The first step was for cities to estimate current conditions. The study concluded that 1.36 million gallons of trash flow through storm drains from 76 cities and county land in Santa Clara, Alameda, Contra Costa and San Mateo counties each year into creeks and the bay. San Francisco, which has a unique system that collects sewage and stormwater together and filters it all at treatment plants, was not included. Nor were North Bay counties that won't be covered under the new state rules for several more years.

The study — completed this month - used gallons, rather than pounds, to measure volume, because much of the trash, such as plastic

wrapping, is very light. What's in the debris stew? Forty-nine percent is plastic -candy wrappers, chip bags, lids and straws, the study found — and 21 percent is paper, 8 percent plastic grocery bags, 7 percent plastic foam and the rest cans, bottles and other debris.

The trash is not only ugly, it also can choke wildlife and tangle boat propellers. Much of it washes into the Pacific Ocean, where it contributes to the Great Pacific Garbage Patch, a vortex of plastic trash north of Hawaii.

To meet the 40 percent reduction by 2014, some places, such as San Jose and Alameda County, have banned plastic bags at supermarkets. Others, such as Oakland, have banned plastic foam packaging at restaurants. Still others have increased street sweeping or installed underground devices to catch trash in storm drains.

'It's a challenge for municipalities," Brosseau said. "There's very little interest in



Volunteers search for trash along the shoreline in San Mateo. A recent study concluded that 1.36 million gallons of trash flow into the bay annually.

raising taxes. They probably can't afford to put in filters everywhere. It's more effective to go after the sources of the trash."

San Jose ranks first on the litter list, with 168,673 gallons of trash going into creeks and the bay. San Jose officials said there's a logical reason: Their city has the most people and acres of any Bay Area city.

When you have more property, you have more lit-ter," said Jennifer Garnett, a spokeswoman for San Jose's Environmental Services Department. "It is a pervasive problem across the Bay Area. e all need to do our part."

By 2014, San Jose plans to cut litter flowing into its 1,150 miles of storm drains by 54 percent, Garnett said. The cost: about \$6.2 million.

Already, San Jose has passed the most far-reaching bag ban of any Bay Area city, outlawing plastic bags at most markets and retailers, in addition to forcing stores to charge for paper bags. It has banned plastic foam at city events and is considering a ban at restaurants. It plans to put in 118 screens at storm drain inlets in high-trash areas and nine large trash-capture devices in storm drain Protection Agency to enlist campments.

Sources of trash around the Bay Area

Below is the estimated annual gallons of trash entering Bay Area creeks via storm drains. San Jose tops the list by total volume, but when population is factored in, it is in the bottom 10. The opposite trend is seen in Colma.

Total by city or unincorporated county land Rank Gallons		Total by city or unincorporated county land per 1,000 people Agency Gallons per 1,000	
	168,673	1. Colma	516
2. Oakland	98,625	2. El Cerrito	510
3. Contra Costa County	57,516	3. Pittsburg	423
4. Fremont	54,742	4. Brisbane	404
5. Hayward	50,761	5. Clayton	395
6. Alameda County	45,543	6. Martinez	394
7. Concord	44,870	7. Richmond	389
8. Sunnyvale	43,318	8. Walnut Creek	369
9. Richmond	40,512	9. Concord	366
10. Santa Clara	38,359	10. Contra Costa County	357
Bottom 10		Bottom 10	
64. Suisun City	2,514	64. San Jose	176
65. Piedmont	2,362	65. Saratoga	175
66. Albany	2,157	66. East Palo Alto	173
67. Brisbane	1,750	67. San Mateo	162
68. Woodside	1,496	68. Los Altos	150
69. Atherton	1,420	69. Alameda	119
70. Portola Valley	1,411	70. Albany	116
71. Colma	932	71. Monte Sereno	93
72. Los Altos Hills	623	72. Suisun City	89
73. Monte Sereno	312	73. Los Altos Hills	78

Note: Study excludes San Francisco, Marin, Sonoma and Napa Source: Bay Area Stormwater Management Agencies Association PAI/BAY AREA NEWS GROUP

tunnels. The city also works homeless people to clean with the U.S. Environmental creeks around homeless en-

lons, is second on the list. The city has put five large trashcapture devices — think massive strainers that catch debris — in its 402-mile storm drain system, and it has plans for three more this year. It draped floating booms in Lake Merritt to catch trash from creeks. And it's working to expand volunteer cleanup programs.

Since we've been working on these things, there's been an absolute, tremendous difference," said Lesley Estes, Oakland's watershed and stormwater management supervisor. "You can see it at Lake Merritt. It's a different place.'

Ranked per capita, Oakland and San Jose do well, coming in below the Bay Area average of 260 gallons of trash per 1,000 people. Top on that list is the tiny city of Colma, with 516 gallons.

The estimates were done by fitting 149 storm drains around the Bay Area with trash-capture devices, and analyzing surrounding land uses. Commercial and highdensity residential areas common in many East Bay cities that rank high on the per capita list — had the

Oakland, with 98,625 gal- most trash. Parks and rural residential areas had the least. The study then came up with total litter estimates by looking at each city's land uses and factors such as the frequency of street sweep-

"We have a Best Buy, two Home Depots and an auto row," said Brad Donohue, Colma's acting public works director. "And we have less than 2,000 residents. That skewed the data."

To reach the 40 percent reduction goal, environmentalists say, cities must install trash-catching devices and ban plastic bags and plastic foam containers, rather than just running public education campaigns.

Some municipalities will resist effective methods that have costs," said David Lewis, executive director of Save the Bay. "That's natural. But these are legal requirements. And the bay has been paying the costs of noncompliance for years."

Library director Leigh. Poitinger contributed to this report. Paul Rogers covers resources and environmental issues. Contact him at 408-920-5045.