



The Dirty Truth

Coming Clean

By Neesha Kulkarni

WITH THE ARRIVAL OF SUMMER, many people look forward to time away from school, work, and the responsibilities of everyday life. As a vacation choice, cruises have grown increasingly popular over the past two decades, making the industry one of the world's fastest growing tourism sectors. Last year more than 9 million passengers took cruises on the seventeen largest cruise lines.

Cruise ships offer passengers the chance to visit new and exciting destinations and view pristine coastal habitats and marine and animal life

that a large cruise ship goes through 12,000 pounds of beef, 7,500 pounds of seafood, 10,000 pounds of fresh fruit, 48,000 eggs, and 500 gallons of ice cream *per week*.

What Goes In Must Come Out

The down and dirty truth is that after consumption, this food and waste has to go somewhere. At home, what you flush down the toilet is sent to a municipal treatment plant before it can be discharged into a water body. However, what

most people don't know is that what you flush down the toilet in your cruise ship stateroom can be dumped untreated

into the ocean to float with the fish. The dumping of sewage into coastal and ocean waters has significant implications.

The contaminants in human waste and wastewater – known as blackwater or sewage – pose a risk to public health not only through the food supply, as fisheries and shellfish beds can be contaminated, but also through direct contamination of water ingested by surfers, beachgoers, and water-sport enthusiasts. In addition, blackwater contains nitrogen and phosphorus that promote

excessive algal growth, which in turn consumes oxygen in the water and can lead to fish kills and the destruction of other aquatic life, including coral. Algal blooms have been implicated in the deaths of more than 150 manatees off the coast of Florida.

In spite of the potential harm, a cruise ship (which often carries as many passengers as there are people in a small town) can legally dump human waste directly into the water as long as it is at least three miles from shore. Within three miles of shore, cruise ships are allowed to discharge sewage treated by a Marine Sanitation Device (MSD). However, the EPA's MSD regulations governing sewage discharges from ships have not been revised since 1976. More importantly, EPA does not require testing or monitoring of sewage discharges, so even if an MSD malfunctions or a ship discharges raw sewage without using an MSD within three miles of shore, there is no way of knowing whether a violation has occurred. Recently, in response to a new cruise ship law in Alaska, some cruise ships traveling to Alaska have started using Advanced Waste Water Treatment Systems. While these treatment systems are more effective than MSDs they do not eliminate metals which can bioaccumulate in

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on Cruise Ships

with little effort. When not in port or on deck watching the passing scenery, passengers can while away the hours engaged in any number of activities, including swimming and mini-golf or they can refuel with food after an afternoon of fun. An average ship has multiple dining rooms serving a plethora of cuisines, sometimes lavishly adorned with fruit carved into flowers and accompanied by elaborate deserts and ice sculptures. Food is available on a cruise ship 24 hours a day, seven days a week. It's been estimated

Type of Pollution	The Source	What's In It
Blackwater	Human waste and wastewater from toilets and medical facilities.	Bacteria, pathogens, disease, viruses, intestinal parasites, pharmaceuticals, nutrients (i.e. nitrogen and phosphorous).
Graywater	Wastewater from sinks, showers, galleys, laundry, and cleaning activities aboard a ship.	Fecal coliform bacteria, detergents, oil and grease, metals, petroleum hydrocarbons, nutrients, food waste, and medical and dental waste.
Oily Bilge Water	Oil mixing with water in the hull of a ship that typically houses engines and machinery.	Oil and oil byproducts.
Hazardous Waste	Dry-cleaning, photo processing, and equipment cleaning, including medical waste, batteries, paints and paint thinner and discarded and expired chemicals, and fluorescent lights.	Fluorescent and mercury vapor, heavy metals, solvents, and unused or outdated pharmaceuticals.



the food supply. They also produce larger quantities of sewage sludge – a concentrated waste left over after the sewage treatment process. Sludge, like sewage, can be dumped just three miles from shore.

In 2006, more than 25,000 days of closings and advisories at ocean, bay and Great Lakes beaches occurred, most due to the presence of bacteria associated with fecal contamination. Two popular cruise ship destinations, Jamaica and Florida, are prime examples of how dumping waste into our oceans causes extreme harm to marine biodiversity. In 2002, only five percent of the coral reefs around Jamaica supported living coral compared with 60 percent 10 years earlier. In 2002, about 90 percent of Florida's coral reefs were believed to be dead or dying. Although cruise ships are not the only cause of this devastation, they are one source of harm that can and should be controlled. It is imperative that we protect our ocean resources and the public health from this pollution.

In addition to sewage, cruise ships also produce and discharge a number of other polluting substances.

Graywater: “Graywater” is the name given to wastewater from sinks, baths, showers, laundry and galleys. Graywater is typically the largest source of liquid waste generated by cruise ships. While it might seem like this wastewater would be less pol-

luting than blackwater, EPA's recently released Draft Cruise Ship Discharge Assessment Report (released as a result of a Friends of the Earth lawsuit) revealed that graywater can contain levels of fecal coliform bacteria higher than those found in untreated domestic wastewater. As a result, graywater poses many of the same public health and environmental risks as sewage. However, unlike the three-mile requirement for disposing of untreated blackwater, under federal law, untreated graywater can legally be discharged anywhere except the Great Lakes, including while a ship is docked in port near towns and beaches.

Oily Bilge Water: The bilge is the lowest part of the hull of a ship and typically houses engines and machinery. Oil often leaks from engines and machinery into the bilge during operation and the performance of routine maintenance activities. These bilge spaces are periodically flushed with water and pumped dry. Before the bilge can be cleared and the water discharged, federal regulations require that accumulated oil be extracted. The extracted oil can then be reused, incinerated, and/or off-loaded in port. Unfortunately, cruise ships have not always been very compliant with the regulations governing oil discharges. In a 2000 report, the U.S. General Accounting Office found

that from 1993 to 1998 alone, cruise ships were involved in 87 confirmed cases of illegal discharges of oil, garbage, and hazardous wastes into U.S. waters – and these are only the confirmed cases. Even small concentrations of oil can kill or chronically disable fish. In humans, oil and byproducts from the biological breakdown of petroleum products can pose health threats if ingested.

Hazardous Waste: Cruise ships offer many of the same amenities that can be found on dry land – including dry cleaning and photo processing. Unfortunately these services produce the same hazardous waste byproducts as their land-based counterparts. Although cruise ships do not generate large quantities of hazardous waste, the waste they do generate can cause harm to sensitive marine life and needs to be carefully managed so that it doesn't find its way into bilge water, graywater, or the solid waste stream. Additionally, hazardous waste tracking measures do not apply when cruise ships off-load waste at international ports, opening up a large loophole through which hazardous waste can be lost.

Friends of the Earth Works to Clean Up Cruise Ship Pollution

Friends of the Earth is fighting on both the local and national level to put the brakes on cruise ship pollution.

In 2000, concerned with increasing levels of pollution from the ever growing cruise industry and a series of incidents in which cruise lines admitted to routinely dumping oil waste and hazardous chemicals into U.S. harbors and coastal areas, Bluewater Network (which became a part of Friends of the Earth in 2005), with the support of 58 other organizations, petitioned EPA to regulate cruise ship pollution. EPA failed to

How much pollution do cruise ships actually discharge?

In *one week alone* a large cruise ship generates approximately:

- 210,000 gallons of blackwater (human waste),
- 1 million gallons of gray water (water from sinks, baths, showers, laundry, and galleys),
- 25,000 gallons of oily bilge water, and
- More than 130 gallons of hazardous wastes.

act on the petition, so Friends of the Earth sued and forced EPA, through a settlement agreement, to release its Draft Cruise Ship Discharge Assessment Report in December 2007. In the Draft Cruise Ship Discharge Assessment report, EPA found that, “[s]ewage contamination in swimming areas and shellfish beds poses potential risks to human health and the environment by increasing the rate of waterborne illnesses.” EPA also found that, in a recent sample taken from cruise ships in Alaska, the average discharge exceeded EPA’s fecal coliform limit by *10,200 times*. EPA is obligated to release the final report in December 2008.

On a legislative front, following two seminal reports released in 2003, advocating that cruise ship pollution loopholes be closed, Bluewater Network took the lead and worked side by side with Senator Richard Durbin (D-IL) and Congressman Sam Farr (D-CA) to introduce the *Clean Cruise Ship Act* (CCSA), a bill that would reduce pollution from cruise ships. The CCSA would ban discharges of sewage, graywater, and oily bilge water from 0-12 nautical miles from shore and place stringent limits, consistent with best available technology, on discharges occurring from 12-200 miles from shore. The CCSA would also ban the discharge of incinerator ash, sewage sludge, and hazardous

waste except at onshore disposal facilities. Additionally, the bill would establish a monitoring, sampling, reporting, and inspection program requiring unannounced annual inspections. The bill would also establish an observer program requiring a trained, independent observer aboard each ship to ensure the ship’s compliance with law. The CCSA has been reintroduced this year and we are working to strengthen its provisions and increase Congressional support for the bill in this session with the ultimate goal of passing the bill in 2009 under a new Administration.

In California, we helped pass five bills which collectively ban cruise ships from discharging sewage, graywater, oily bilge water, sewage sludge, and hazardous waste into state waters and prohibit cruise ships from burning garbage, paper, sludge and any other materials in on-board incinerators while operating in state waters. In addition, we successfully petitioned the National Oceanic and Atmospheric Administration (NOAA) for a ban on these same cruise ship discharges within the sensitive and ecologically important National Marine Sanctuary System — the ocean equivalent to the national park system. California has four of these sanctuaries along its coast, including the Monterey Bay and Gulf of Farallones National Marine Sanctuaries.

Friends of the Earth has also expanded its cruise ship work into the Pacific Northwest. We have successfully protected the Olympic Coast National Marine Sanctuary in Washington State from cruise ship discharges and compelled the Port of Seattle to send hazardous dredged material to a landfill rather than dumping it back into Puget Sound. We are also working with the Seattle Port Commission and other state agencies to protect the delicate marine ecosystem of Puget Sound from the rapidly expanding threat of cruise ship and ocean-going vessel pollution and have successfully strengthened an agreement with the cruise industry to limit cruise ship discharges in the Sound.

Cleaning up the poop deck: what you can do to help

Whether you are scheduled to take a cruise or not, you can call your Member of Congress and ask him or her to support the Clean Cruise Ship Act of 2008 as it moves through Congress. You can also urge your local representatives to do something about the problem of cruise ship pollution in your area. Currently, Alaska, California, and Maine are the only states with laws that address cruise ship pollution. More states could benefit from local action to stop the destruction of human health and the environment. If you are already scheduled to take a cruise, you can ask to meet with the environmental officer on board the ship to learn more about what they do with their waste. Let them know that you care about what cruise ship pollution is doing to our oceans and public health. You can also call up the major cruise lines and tell them that you want them to stop dumping their waste indiscriminately and to support legislation to fix the problem. ○