

Chapter 3

We Visit Some of the Most Pristine Areas of the World

“We visit some of the most pristine areas of the world and our income depends on them staying that way, so why would we pollute?” That’s a common cruise industry response to those who challenge its environmental practices. Their question is disarming at first. But it can be turned back on the industry. Why aren’t they more conscientious in their environmental practices, especially given the increasing presence of cruise ships in environmentally delicate areas such as the Amazon, Antarctica, the Galapagos Islands and areas of the Indian Ocean such as Seychelles? A *London Times* reporter observes: “The more isolated the destination, the more the marketing people seem to love to send their vessels there” (Elliot 2007). But it isn’t just remote areas that warrant concern. This chapter looks at the waste streams produced by cruise ships and at other environmental issues. It discusses developments in environmental regulation of cruise ships and organizations that are promoting stronger environmental policies.

Cruise Ship Waste Streams

Cruise ship discharges into the marine environment include black water (sewage), grey water, hazardous wastes, oily bilge water, ballast water, solid waste and air emissions from incinerators and engines. If not properly treated and disposed of these wastes can be a significant source of pathogens, nutrients and toxic substances that are potentially harmful to human health and sea life (Copeland 2007). The air emissions are significant—a cruise ship on average discharges three times more carbon emissions than aircraft, trains and passenger ferries.

Carnival, which comprises 11 cruise lines, said in its annual environmental report that its ships, on average, release 712 kg of CO² per kilometer... This means that 401g of CO² is emitted per passenger per kilometre, even when the boat is entirely full. This is thirty-six times greater than the carbon footprint of a Eurostar passenger train and more than three times that of someone travelling on a standard Boeing 747 or a passenger ferry. (Starmer-Smith 2008)

The cruise industry frequently claims that it is only a small part of the problem given the proportionately larger number of other ocean going

vessels and that these vessels too produce waste. While this may be true for some waste streams, it is not the case with others. With its large number of passengers and crew, wastes such as black water, grey water, solid waste and air emissions are greater on cruise ships than on other ships. In addition, because cruise ship operations tend to concentrate in the same geographic locations and along the same sea routes, their cumulative impact on local areas can be significant. Add to this the potential for and reality of accidental discharges and the environmental impacts are a serious concern.

Black Water

Black water is the waste from toilets and medical facilities. A cruise ship produces as much as thirty litres per day per person. The amount per day for a ship such as Royal Caribbean's *Freedom of the Seas* is as much as 180,000 litres, or about 1.25 million litres on a one-week cruise. These wastes contain harmful bacteria, pathogens, disease, viruses, intestinal parasites and harmful nutrients. If not adequately treated they can cause bacterial and viral contamination of fisheries and shellfish beds. In addition, nutrients in sewage such as nitrogen and phosphorous promote algal growth. Algae consume oxygen in the water, which can be detrimental or lethal to fish and other aquatic life.

Black water from cruise ships has traditionally been treated by a type II or type III marine sanitation device (MSD). Type III MSDs, not commonly used by large cruise ships, store wastes and do not treat them. The waste is landed ashore for treatment or, depending on the jurisdiction, is held until the ship is beyond three miles from shore where it can be discharged legally.

A type II MSD treats waste chemically or biologically and is supposed to produce effluent containing no more than 200 fecal coliform per 100 millilitres and no more 150 milligrams per litre of suspended solids. Whether MSDs reach that standard was called into question in 1999 when the state of Alaska found that seventy-nine of eighty samples taken from cruise ships were out of compliance—by as much as 100,000 times higher than allowed (Klein 2002: 105). According to the Juneau port commander for the Coast Guard, the results were so extreme that it might be necessary to consider possible design flaws and capacity issues with the Coast Guard-approved treatment systems (McAllister 2000). The problems identified then with MSDs continue today (see EPA 2007).

Treated waste from type II MSDs is unregulated under U.S. law because ships are exempt from requirements of the National Pollution Discharge Elimination System (NPDES) under the U.S. *Clean Water Act*. As a result, wastewater discharges from land-based sources are regulated through permits and inspections, but discharge of the same waste in coastal waters from a mobile source are not. U.S. law permits a ship to discharge untreated sewage beyond

three miles from shore (treated sewage may be discharged within three miles). Jurisdictions that have ratified Article IV of the International Convention for Prevention of Pollution from Ships (MARPOL) have a four mile limit.

About the time that Alaska was calling attention to the inadequacy of MSDs the cruise industry began installing advanced wastewater treatment systems (later referred to as advanced wastewater purification systems) on its ships. State legislation in 2001 banning discharge in Alaska state waters of wastewater not meeting Alaska water quality standards was a strong incentive. A ship with an advanced wastewater treatment systems (AWTS) avoided the need to travel outside Alaska state waters to discharge treated sewage. Installation of AWTSs for ships visiting areas other than Alaska has been at a much slower pace. For example, Carnival Corporation had AWTSs installed on slightly more than one third of its fleet at the end of 2007. However only one of Carnival Cruise Lines' twenty-two ships had an AWTS. Carnival Cruise Lines only sends one ship to Alaska per season. The corporation's spokesperson says they try to make sure AWTSs are included on ships that go to Alaska and to other sensitive areas. By contrast, all of Norwegian Cruise Line's thirteen ships, seven of Royal Caribbean International's nineteen vessels and six of Celebrity Cruises' eight ships had an AWTS at the end of 2007 (Brannigan 2008).

The advanced systems are a vast improvement—yielding what the industry refers to as drinking-water quality effluent. However the term must be treated with caution. The water cannot be recycled for onboard human consumption, nor can it be used in the laundry because sheets and towels apparently turn grey. A key problem is that the AWTS doesn't adequately address nutrient loading, which means it poses similar problems as MSDs with regard to nitrogen and phosphorous. In addition, tests in Alaska have shown levels of copper, nickel, zinc and ammonia that are higher than the state's water quality standards (Alaska DEC 2004: 29).

Most AWTSs filter solids from sewage as part of treatment. This yields on average thirty-five tons of sewage sludge per day. In sum, it is estimated that 4.2 million gallons of sewage sludge are produced every year by ships as they pass through Washington State waters on their way to Alaska (King County Wastewater Treatment Division 2007). This is small compared to what cruise ships generate outside Washington state waters. In some cases (about one in sixteen ships) sewage sludge is dewatered and then incinerated. In other cases the sludge is dumped at sea. Some jurisdictions permit this to be done beyond three miles of shore; in others the ship must go beyond twelve miles. In either case, these bio-solids have a high oxygen demand and are detrimental to sea life. Sewage sludge poses the same problem as sewage but in a more concentrated form.

Grey Water

Grey water is wastewater from sinks, showers, galleys, laundry and cleaning activities aboard a ship. It is the largest source of liquid waste from a cruise ship: as much as 350 litres per day per person; over 2 million litres per day for a ship such as *Freedom of the Seas*. Like sewage, grey water can contain a variety of pollutants. These include fecal coliform bacteria, detergents, oil and grease, metals, organics, petroleum hydrocarbons, nutrients, food waste and medical and dental waste (Copeland 2007). The greatest threat posed by grey water is from nutrients and other oxygen-demanding materials. The cruise industry characterizes grey water as innocuous, at worst. A report from the EPA in 2007 said:

Untreated ship graywater concentrations exceeded EPA standards for discharges from Type II MSDs (for fecal coliform and total suspended solids). In addition, untreated graywater concentrations exceeded all wastewater discharge standards under Title XIV for continuous discharge from cruise ships in Alaska, and secondary treatment discharge standards from land-based sewage treatment plants. (EPA 2007: 3: 19)

Except for the Great Lakes and Alaska, grey water is largely unregulated. As recently as the 1980s ships were designed with pipes that directly discharged grey water overboard no matter where the ship was. Today grey water is more commonly collected in a holding tank and discharged through a screen that filters out plastics when a ship is one mile from shore. Vessels with an AWTs may mix grey water with black water and treat them together, but this isn't always possible. Grey water lacks sufficient nutrients for a bio-reactor system to properly function, so ships using this design release their grey water with limited or no treatment.

Many of the advances that have occurred in treatment of grey and black water have been motivated by Alaska's requirement that all discharges in its waters meet or exceed state water quality standards with regard to fecal coliform and suspended solids. Alaska has demonstrated that legislation is effective in achieving environmental protection.

Hazardous Waste

A ship produces a wide range of hazardous waste. These include photo processing chemicals, dry cleaning waste, used paint, solvents, heavy metals, expired chemicals and pharmaceuticals, waste from the print shop, hydrocarbons and chlorinated hydrocarbons, used fluorescent and mercury vapour light bulbs and batteries (U.S. Bureau of Transportation Statistics 2002). Although the volume produced by a ship may be relatively small (less than 1,000 litres in a typical week), the toxicity of these wastes makes them

a serious concern. They need to be carefully managed in order to avoid their contaminating other waste streams (e.g., grey water, solid waste, bilge water, etc).

Following a dismal record in the 1990s cruise lines today appear to be fairly responsible in their hazardous waste handling. Norwegian Cruise Line (NCL) and Royal Caribbean had each pleaded guilty to a charge of discharging hazardous waste (and oily bilge water) from their ships: Royal Caribbean paid fines and restitution of \$18 million in 1999 and another \$3.5 million in 2000; NCL paid a fine and restitution of \$1.5 million in 2002 (see Klein 2002 and Klein 2005a). Each was on probation for five years and required to file compliance reports every six months.

Cruise industry compliance in the U.S. must be seen in the context of confusion over what regulations apply. The *Resource Conservation and Recovery Act* (RCRA) is the primary federal law governing hazardous waste but it is not entirely clear what elements apply to cruise ships. RCRA rules that cover small-quantity generators (those that generate more than 100 kilograms but less than 1,000 kilograms of hazardous waste per month) are less stringent than those for large-quantity generators (generating more than 1,000 kilograms per month), and it is not clear whether cruise ships are classified as large or small generators of hazardous waste. Further, it is unclear whether these limits are applied for each ship individually or whether they apply to a company's full complement of ships. Some cruise companies say they generate less than 100 kilograms per month and therefore should be classified in a third RCRA category, as conditionally exempt small generators, a category that allows for less rigorous notification and recordkeeping requirements (Schmidt 2000). The confusion leads to inconsistencies in practice and some would argue to less stringent recordkeeping than should be required (especially of cruise ships with regular trans-boundary itineraries).

Oily Bilge Water

A typical large cruise ship will generate an average eight metric tons of oily bilge water for each twenty-four hours of operation (National Research Council 1995: 38–39). According to Royal Caribbean's 1998 Environmental Report its ships produce an average of 25,000 gallons of oily bilge water on a one-week voyage. This water collects in the bottom of a vessel's hull from condensation, water lubricated shaft seals, propulsion system cooling and other engine room sources. It contains fuel, oil and wastewater from engines and other machinery, and it may also include solid wastes such as rags, metal shavings, paint, glass and cleaning agents.

The risks posed to fish and other marine organisms by oil and other elements in bilge water are great. Even in minute concentrations, oil can kill fish or have numerous sub-lethal effects such as changes in heart and respira-

tory rates, enlarged livers, reduced growth, fin erosion and biochemical and cellular changes. Research also finds that by-products from the biological breakdown of petroleum products can harm fish and wildlife and pose threats to human health if these fish and wildlife are ingested.

Oily bilge water in U.S. waters is regulated by the *Clean Water Act*. The Act prohibits the discharge of oil or hazardous substances in such quantities as may be harmful within 200 miles of the coast. It permits discharge of oil within twelve miles of shore when it is passed through a fifteen parts per million (ppm) oily water separator and does not cause a visible sheen. Beyond twelve miles, oil or oily mixtures can be discharged while proceeding en route and if the oil content of the effluent without dilution is less than 100 ppm. The oil extracted by the separator can be reused, incinerated and/or offloaded in port. Vessels are required to maintain an oil record book that documents disposal of oily residues and discharges overboard or disposal of bilge water.

Each of the three major cruise corporations in the world have been caught and fined for illegal discharge of oily bilge. Royal Caribbean pleaded guilty to falsifying oil record books in order to conceal its practice of bypassing the oily water separator so that waste could be discharged directly into the sea. Investigators found that seafarers had discharged oil-contaminated bilge water directly overboard on a regular and routine basis. In 2002, Norwegian Cruise Line pleaded guilty to the same practices on its ships. Also in 2002, Carnival Corporation pleaded guilty to violations committed by Carnival Cruise Lines. One condition of the guilty plea was that other brands in Carnival Corporation family would not be investigated. Carnival Corporation's Holland America Line pleaded guilty in 1998 to bypassing the oily water separator on one of its ships and couldn't afford a second felony conviction.

Collectively from 1998 through 2002 the three corporations (Royal Caribbean Cruise Line, Norwegian Cruise Line, and Carnival Corporation) paid fines and restitution of \$50 million for discharging (or falsifying records to conceal discharging) oily bilge water and hazardous waste. The practice of using bypass pipes appears to have ceased on cruise ships but continues to be found on other types of ships.

The obvious question is why a cruise ship would adopt such a practice. A key incentive was the monetary savings associated with not using the oily water separator. The membranes for the separator could cost as much as \$80,000 per year. In addition it could cost another \$300,000 per year to dispose ashore the waste oil derived from the separator. Not only did the company save money but a ship's officers could receive larger end-of-the-year bonuses for staying under budget (Frantz 1999a).

Solid Waste

A cruise ship produces a large volume of non-hazardous solid waste. This includes huge volumes of plastic, paper, wood, cardboard, food waste, cans and glass. It was estimated in the 1990s that each passenger accounted for 3.5 kilograms of solid waste per day (Herz and Davis 2002: 11). With better attention to waste reduction this volume in recent years has been reduced, maybe by as much as half. But the amount is still significant—more than eight tons in a week from a moderate sized ship. Twenty-four percent of the solid waste produced by vessels worldwide comes from cruise ships (Copeland 2007: 5).

Much of a cruise ship's garbage is discharged at sea. Food and other waste not easily incinerated is ground, or macerated, and discharged overboard. Solid waste and some plastics are incinerated on board and the ash then goes into the ocean. By-products left in the ash of incinerated plastics can be harmful to sea life and the environment. As well, incinerator air emissions can contain carcinogens such as furans and dioxins. Glass and aluminum are increasingly held onboard and landed ashore for recycling when the itinerary includes a port with reception facilities.

Under MARPOL (and U.S. and Canadian law) no garbage can be discharged within three miles of shore. Between three and twelve miles garbage can be discharged if ground and capable of passing through a twenty-five millimetre screen. Most food waste and other garbage can be discharged at sea when a ship is more than twelve miles from shore. Throwing of plastic into the ocean is strictly prohibited everywhere. It poses an immediate risk to sea life that might ingest it. It also has a long term risk. As plastic degrades over time it breaks down into smaller and smaller pieces but retains its original molecular composition. The result is a great amount of fine plastic sand that resembles food to many creatures. Unfortunately, the plastic cannot be digested so sea birds or fish can eventually starve to death with a stomach full of plastic (Reid 2007).

Ballast Water

Cruise ships like other ocean going vessels use a tremendous amount of ballast water to stabilize the vessel during transport. This water is often taken on in one location after a ship discharges wastewater or unloads cargo and then discharged at the next port of call. Ballast water typically contains a variety of biological materials, including plants, animals, viruses and bacteria. It can also include non-native, nuisance, exotic species that can cause extensive ecological and economic damage to aquatic ecosystems. Ballast water discharges are believed to be the leading source of invasive species in U.S. marine waters, thus posing public health and environmental risks

as well as significant economic cost to industries such as water and power utilities, commercial and recreational fisheries, agriculture and tourism. The problem is not limited to cruise ships and there is little cruise-industry specific data on the issue.

There are open ocean exchange requirements for ballast water under MARPOL but no regulations apply to ballast water quality. In the U.S., ballast water is explicitly exempt from permit requirements under the *Clean Water Act*. The exemption was challenged by a number of environmental groups in a 1999 petition to the Environmental Protection Agency (EPA). The petition was rejected in September 2003. The environmental groups responded by filing a lawsuit seeking to force the EPA to rescind the exemption, and in March 2005 a federal district court ruled in their favour. The court's decision requires the EPA to remove the exemption by September 30, 2008. In the interim, four environmental groups (Bluewater Network, Environmental Law Foundation, Surfrider Foundation and San Diego Baykeeper) filed suit in state court to force cruise ships to follow a California ballast water law passed in 2000, a law that two-thirds of cruise ships were ignoring. All complied after the lawsuit was heard by a state court (see Bluewater Network 2002).

Air Emissions

Both incinerators and engines are responsible for air emissions from cruise ships. Each type of air emission presents its own problems. The use of incinerators for disposing of solid waste and dewatered sewage sludge has already been addressed in regard to ash discharged into the ocean. Incinerators also produce smoke, which is why many ports ban their use while a ship is docked. California, a leader in environmental protection, prohibits incinerator use when a ship is within three miles of the coast. In contrast to incinerator use on land, which is likely to be strictly monitored and regulated, incinerators at sea operate with few limits. MARPOL Annex VI only bans incineration of certain particularly harmful substances.

Air emissions from engines are an obvious source of pollution. Conventionally a cruise ship's impact on the atmosphere has been likened to that of 12,240 automobiles, but a 2007 study raises even greater alarm. It found that bunker fuel on average has almost 2,000 times the sulphur content of the diesel fuel used by buses, trucks and cars and that one ship can make as much smog-producing pollution as 350,000 cars (Waymer 2007). This figure can vary widely depending on the fuel being burnt. A small number of ships began using gas turbine engines in the late 1990s and early 2000s, well before the spike in fuel costs in 2007. These gas turbines are considerably better than conventional cruise ship engines in terms of sulphur and nitrous oxide, but on the downside they produce considerably higher levels of greenhouse gases (i.e., carbon dioxide—CO²).

Most cruise ships burn bunker fuel or fuel oil with reduced sulphur content. With International Maritime Organization standards that set maximum sulphur content at 4.5 percent, it is easy for cruise lines to say they meet or exceed international regulations when the average for bunker fuel is 3 percent. In contrast, low sulphur fuels such as on-road diesel has a sulphur content as low as 0.5 percent. It reduces particulate matter 58 percent, sulphur 11 percent and oxides of nitrogen 99.6 percent over bunker fuel.

Cruise lines have been resistant to adopting these fuels. A case in point is the situation of the Port of Seattle. When undertaking construction of a new terminal (T-30) in 2002 the port gave assurances to the Puget Sound Clean Air Agency and the Army Corp of Engineers that ships using the terminal would be required to use fuel with a sulphur content of 0.5 percent or less. On January 8, 2003, it told the Army Corp:

In order to make sure that all applicable air quality standards are met, diesel-powered cruise vessels using T-30 as a homeport will use on-road diesel fuel, or a similar fuel with less than 0.05 per cent sulphur. Turbine-powered cruise vessels will use fuel with no more than 0.5 per cent sulphur while home porting at T-30. (McClure 2003)

When it was learned in August 2003 that ships docking at Terminal 30 were not using low sulphur fuels the port responded that its expectation was voluntary, not mandatory.

While cruise lines knew the conditions when they committed to using Terminal 30 they subsequently argued they couldn't use low sulphur fuels. Tom Dow, vice president of Princess Tours, said his company planned to remedy the problem the following year by substituting two cruise ships with cleaner burning engines for the single vessel calling in 2003 but he didn't address the current year. He also minimized the impact of Princess Tours' ships, stating that his ship will be in Seattle for only eighteen days, and for only part of those days. "That's a tiny fraction of the parade of ships that enters and exits Puget Sound" (McClure 2003).

These statements get at the core of a problem—a problem of credibility regarding environmental concern. The industry promised it would use low sulphur fuels when it agreed to shift ships from Vancouver to Seattle, but the promise didn't correspond with practice. And it minimizes the value of using low sulphur fuel by concentrating only on the time the ships spends in Seattle (a small proportion of the full week).

The way this became public is interesting. As the California legislature was considering a bill that would require use of low sulphur fuel in California state waters, cruise industry lobbyists at the last minute claimed that it wasn't technically possible for a ship to shift to low sulphur fuel. Being aware of

the commitments made to Seattle and of Seattle's requirements, Bluewater Network (which was a proponent of the legislation) contacted the Port of Seattle and asked: "Aren't you using low sulphur fuel there?" The answer: "Well, no they're not. Not any more." The disclosure had the effect of killing California's initiative to have cruise ships do in its waters what was believed to be the practice in Seattle (Klein 2005a: 166–169).

To address the problem of emissions from auxiliary engines run for electricity while a ship is docked, some ports and cruise lines have made arrangements for ships to hook into the shore-side power grid. This was first introduced in 2001 in a partnership between the port of Juneau and Princess Cruises and is slowly expanding to other locations.

Another initiative that appeared at first blush to have potential was introduced by Holland America Line in June 2007. It announced a pilot project that used a saltwater air emission scrubber on its *Zaandam*. When *Zaandam* operated on the west coast of North America (British Columbia and Alaska) it used fuel with a sulphur content of about 1.8 percent; while operating during the winter months in the Caribbean the sulphur content was as much as 3 percent (Montgomery 2007a). The scrubber, at a cost of \$1.5 million, was supposed to reduce emissions, chiefly sulphur.

The scrubber was used in June 2007 to counter a campaign initiated by Denise Savoie and Peter Julian, members of Canada's parliament from British Columbia. Savoie, representing Victoria (a quickly expanding cruise port), called on government to begin a process that would lead to a clean cruise ship act. The industry responded that the scrubber and AWTS were examples of why legislation wasn't needed. Both lent support to the industry's claim of its voluntary exercise of responsibility.

Ironic to some, at the end of the summer cruise season in the Pacific Northwest it was learned that the scrubber system, which uses seawater pumped through the stacks to chemically scrub sulphur and other contaminants from ship emissions and then dumps the water back overboard, was actually contributing to increased greenhouse gases. Research out of Sweden and the U.K. indicated:

When sulphuric acid is added to seawater by scrubbers, carbon dioxide is freed from the ocean surface. Each molecule of sulphuric acid results in release of two molecules of carbon dioxide as the ocean attempts to retain its alkaline balance. (Montgomery 2007b)

Air emissions continue to be a concern, with no quick fixes in sight. Reducing the sulphur content of the fuel appears to be the most promising short-term solution. In June 2007 Norway announced a complete ban on heavy fuel oil onboard ships inside the two large nature reserves covering most of the waters of eastern Svalbard. It also announced a nitrous oxide tax

on all cruise ships beginning in 2009 (fifteen kroner per kilo for bunker fuel, as low as four kroner per kilo for fuel with low nitrous oxide). Rather than embracing Norway's concern Holland America Line announced it would cancel all of its Norwegian itineraries in 2009 (*Shipping Gazette* 2007).

The Industry's Environmental Record

At the same time as projecting a positive environmental image the cruise industry paid tens of millions of dollars in fines for environmental offences. These include dumping garbage in plastic bags overboard, discharging into the ocean hazardous wastes and oily bilge water that by-passed the oily water separator, releasing into coastal waters sewage and other wastewater in contradiction of promises and water quality standards and violating air quality regulations (particularly in Alaska). Violations were most frequent in the 1990s. Enforcement efforts (initially in Bermuda and Grand Cayman and later in the U.S.) have impacted industry practices and behaviour.

The U.S. began stricter enforcement for pollution offences in 1993 following a number of unsuccessful attempts to have the problem addressed by the state where offending ships were registered. In October 1992, it notified the International Maritime Organization's Marine Environmental Committee that it had reported MARPOL violations to the appropriate flag states 111 times, but received responses in only about 10 percent of the cases. Subsequently, between 1993 and 1998, the U.S. Government charged 104 ships with offences involving illegal discharges of oil, garbage and/or hazardous wastes (GAO 2000). It also began levying fines: one-half million dollars from Princess Cruises for dumping more than twenty plastic bags full of garbage off the Florida Keys; one million dollars from Palm Beach Cruises after Coast Guard surveillance aircraft videotaped the Viking Princess intentionally dumping of waste oil 3.5 miles from the port of Palm Beach; one-quarter million dollars from Regency Cruises after it admitted two of its ships dumped garbage-filled plastic bags in Florida waters; and one-half million dollars from Ulysses Cruises for two incidents of plastic-wrapped garbage being thrown from the *Seabreeze* off Miami and two cases of dumping oily bilge water. And there were many more. But the most significant, in 1998, 1999 and 2002, were fines levied against Royal Caribbean (\$30.5 million), Holland America Line (\$2 million), Carnival Corporation (\$18 million) and Norwegian Cruise Line (\$1.5 million) (see Klein 2002: 83–89 and Klein 2005a: 135–143).

Fines brought unwanted and negative media attention to the cruise industry. At the height, just after U.S. Attorney general Janet Reno chastised Royal Caribbean for using the nation's waters as its dumping ground while promoting itself as an environmentally "green" company, the International Council of Cruise Lines (ICCL) issued a press release affirming the cruise

industry's commitment to maintaining a clean environment and to keeping the oceans clean.

Regrettably, there have been violations of environmental laws involving cruise lines in the past few years. These incidents have served as an important wake up call, causing our industry to redouble its efforts to improve its environmental performance. (ICCL 1999)

Two years later, in July 2001, while Carnival Corporation and Norwegian Cruise Line were under investigation and immediately after Alaska's senate cleared the way for final vote on the Alaska Cruise Initiative (which would set standards for wastewater discharges into the state's waters), ICCL released *Cruise Industry Waste Management Practices and Procedures*. The standards contained in the document effectively were the same as what already existed in U.S. law and or international conventions such as MARPOL. They represented a commitment to abide by existing laws and regulations.

Despite being mandatory, violations appeared to have no impact on a cruise line's ICCL membership or status in the organization. Carnival Corporation, for example, was back in federal court within a year of pleading guilty in 2002 to six counts of falsifying records in relation to oil discharges from five ships operated by Carnival Cruise Lines. It had been summoned in July 2003 after a probation officer reported that the company failed to develop, implement and enforce the terms of an environmental compliance program stemming from the 2002 plea agreement. Holland America employees reportedly submitted twelve audits that contained false, misleading and inaccurate information (Dupont 2003). Carnival Corporation replied to the court that three environmental compliance employees had been fired for the reports but it did not admit violating its probation. In a settlement signed August 25, 2003, Carnival agreed to hire four additional auditors and to provide additional training for staff (Perez 2003: D1).

The corporation was again under investigation in March 2004 for illegal discharges. Holland America Line, a wholly owned subsidiary of Carnival Corporation, notified the United States and Netherlands governmental authorities that one of its chief engineers had admitted to improperly processing oily bilge water on the *Noordam*. According to the company's filing with the U.S. Securities and Exchange Commission, a subsequent internal investigation determined that the improper operation may have begun in January 2004 and continued sporadically through March 4, 2004. Several months later, in July 2004, Holland America Line was again in the news when its former vice president for environmental compliance pleaded guilty to certifying environmental compliance audits that had never been done (Klein 2005a). ICCL's lack of comment and absence of action contrasts starkly with how it proudly promoted its mandatory practices and procedures.

Violations (or as the industry often calls them, accidents) continued. In February 2002, P&O's *Caronia* was detained and fined \$410,000 by Brazilian authorities after nearly 8,000 gallons of heavy fuel oil spilled into Guanabara Bay near Rio de Janeiro. In August 2002, Holland America Line's *Ryndam* discharged as much as 40,000 gallons (250 gallons according to HAL) of sewage sludge into Juneau harbour. The case went to a grand jury in Anchorage and after more than two years Holland America pleaded guilty to a single misdemeanour count of negligently discharging 20,000 gallons of untreated sewage. It paid fines and restitution amounting to \$700,000 and agreed to spend \$1.3 million to improve its ships' handling of waste.

In January 2003, Carnival Cruise Lines reported an incidental discharge of grey water while anchored one-half mile from land while in Avalon Bay (Catalina Island, California) (Klein 2005a: 142). One month later a Canadian couple aboard the *Norwegian Wind* reported observing whole beer bottles, whole wine bottles, beer and pop cans, corks, plastic plates, plastic utensils, plastic cups and organic material being tossed into the ocean from the back while the ship was between Hawai'i and Fanning Island. The company insisted it did nothing illegal even though discharge of plastics is strictly forbidden anywhere at sea. The couple reported what they saw to U.S. authorities but no action was taken against the company because the ship was in international waters at the time.

In March 2003 Crystal Cruises admitted that its *Crystal Harmony* had discharged 36,000 gallons of treated bilge, treated sewage and grey water into the Monterey Bay Marine Sanctuary the previous October. The discharge violated a written promise the company had made to discharge nothing while in the sanctuary. The discharge was discovered by a state official in a review of the ship's logs. When the company was challenged about the non-disclosure, the company's vice president defended their silence by saying the company hadn't broken any laws; they had only broken their word (Klein 2003a: 14).

Then in May *Norwegian Sun* was cited for the illegal discharge of 16,000 gallons of raw sewage into the Strait of Juan de Fuca; in October Carnival Cruise Lines paid a \$200,000 administrative fee to settle with the California State Lands Commission over the cruise line's non-compliance with the state's ballast water law; and in December it became public that the industry had logged fourteen violations of a voluntary agreement it had with the state of Hawai'i that set clear limits on where discharges could take place.

Environmental violations have become less frequent more recently, but they still occur. In October 2005, NCL America's *Pride of Aloha* discharged approximately 300 gallons of effluent into Hilo Harbour; five months later the same ship discharged about seventy tons of treated effluent into Honolulu Harbour. Its sister ship, *Pride of America*, discharged a small amount of what

appeared to be diesel fuel into Hilo Harbour in September 2007. And there have been multiple violations of voluntary memoranda of understanding between the cruise industry and the states of Hawai'i and Washington.

Two case illustrations give insight into the way some in the industry think. On November 13, 2006, *The Sunshine Coast Daily* in Australia reported taxi drivers in Vanuatu had gone on strike, refusing to transport passengers aboard P&O Australia's *Pacific Sky*, forcing them to walk five kilometres to town. The taxi drivers had just learned that the Vanuatu government was investigating the illegal dumping of one-half million litres of oil on the island. Apparently, deep holes were dug, lined with thin plastic and then filled with oil and raw sewage. The site was within one kilometre of a village and school and just above a river used for drinking, washing and swimming. The motivation: it would cost US\$30,000 to appropriately dispose of the waste at approved facilities in the region whereas dumping illegally cost less than \$200. The company faced a potential fine of \$35 million but in the end was able to convince the government that an apology and commitment to clean up the mess were sufficient.

A violation by Celebrity Cruises' *Mercury* gives further insight into the industry's thinking. The company was notified by the state of Washington in November 2006 that it would be fined for dumping one-half million gallons of sewage and untreated grey water into Puget Sound ten times over nine days in September and October 2005. The company initially denied the claim but it acquiesced when shipboard documents indicated otherwise. It then appealed to state officials for relief from penalty—each incident carried a \$10,000 fine—because three of the violations occurred on the Canadian side of the international boundary and Washington did not have jurisdiction. As well, the cruise corporation argued the discharges, while a violation of its memorandum of understanding with Washington, were not illegal in Canada (McClure 2006).

The state of Washington agreed to reduce the fine from \$100,000 to \$70,000, but the company paid the full \$100,000 after all. It said the money was never the issue; its concern was to ensure there was accurate information. It went on to say that paying the full amount was in order to demonstrate its commitment to protecting and preserving Washington State's marine environment (McClure 2007). It never apologized to Canada for the discharges and expressed no complementary commitment to the marine environment of British Columbia or Canada. It is as though the wastewater discharged in Canada was immaterial because it was legal. This appears inconsistent with industry claims to have a genuine and strong commitment to the environment.

Memoranda of Understanding versus Legislation

Violations in Washington State are against a memorandum of understanding (MOU) between the state and the cruise industry as represented by the Vancouver-based Northwest Cruiseship Association (NWCA). The MOU in large part adopts standards contained in the International Council of Cruise Lines' *Cruise Industry Waste Management Practices and Procedures*. Unlike MOUs in other jurisdictions such as Florida and until 2006 Hawai'i, Washington has prescribed penalties for non-compliance. Enforcement is based on review of ship logs. There is no direct monitoring in real time.

A MOU is a voluntary arrangement. As such it has limited enforceability in law and is largely based on trust. For this reason, MOUs are criticized by those concerned with the cruise industry's environmental practices. Their scepticism is supported by a 2003 report from the Paris-based Organization for Economic Co-operation and Development (OECD). The report directly questions the environmental effectiveness and economic efficiency of voluntary approaches and, focusing specifically on environmental policy, notes there are few cases where voluntary approaches have improved the environment beyond a business-as-usual baseline (OECD 2003).

The issue of trust has been raised by many concerned with cruise industry practices, especially in light of past violations. California Assemblyman Joe Simitian expressed it clearly when he introduced legislation to regulate cruise ship discharges in state waters: "Regrettably, cruise lines have a history of violating their agreements and gaming the system. 'Trust us' is no longer an effective environmental policy" (Weiss 2003: B1). Like folks in other states, he viewed legislation with enforceable standards and penalties as the only way to go.

However legislation isn't always better. Hawai'i is a case in point. In 2005 the cruise industry successfully lobbied for legislation that was much less stringent than the existing MOU between Hawai'i and the NWCA. The legislation was enacted on July 12, 2005. Two months later the NWCA gave notice that it was transitioning out of the MOU because of ambiguity and confusion caused by having two sets of standards. Rather than continue to voluntarily abide by the more stringent terms contained in the MOU the industry chose the less comprehensive legislation (which it had supported). The industry gave notification without fanfare; it was made public two months later after it was learned by KAHEA—the Native Hawaiian Environmental Alliance.

Florida and Washington are the only two U.S. states to use a MOU to set environmental standards for cruise ships. Three states, Maine, California and Alaska, have enacted legislation. The advantage of legislation is that it codifies standards and permits legal recourse for violations.

In April 2004, the state of Maine enacted legislation governing discharges

of grey water or mixed black/grey water into coastal waters of the state. The legislation applies to cruise ships with overnight accommodations for 250 or more passengers and allows such vessels into state waters only if they have advanced wastewater treatment systems, comply with discharge and record-keeping requirements currently in place in Alaska and secure a permit from the state Department of Environmental Protection. Maine's legislation also directed the state to apply to the U.S. Environmental Protection Agency for designation of up to fifty "No Discharge Zones" (NDZs) in order that Maine could then prohibit black water discharges into state waters. In June 2006 the EPA approved the state's NDZ request for Casco Bay, which is where Portland is located.

California enacted three bills in 2004. One bars cruise ships from discharging treated wastewater while in the state's waters, another prohibits vessels from releasing grey water and the third prevents cruise ships from operating waste incinerators. A year earlier the state enacted laws banning passenger ships from discharging sewage sludge and oil bilge water as well as prohibiting vessels from discharging hazardous wastes from photo processing and dry cleaning operations into state waters. In 2006 California enacted a law that required the state to adopt ballast water performance standards by January 2008 and sets specific deadlines for the removal of different types of species and bacteria from ballast water by the year 2020.

Alaska Takes the Lead with Legislation

Alaska is both the first and the most recent to enact environmental legislation applying to the cruise industry. Broad-based concerns about pollution from cruise ships arose in the state after Holland America Line in 1998 and Royal Caribbean International in 1999 pleaded guilty to criminal charges of dumping oily wastes and hazardous chemicals in Alaska's Inside Passage. In addition to the federal fines paid by both companies for their violations in Alaskan waters, Royal Caribbean International was levied a \$3.5 million fine in January 2000 in state court. These fines, and the behaviour for which they were assessed, spurred an increased interest in monitoring cruise ships; not just for oil pollution but sewage and air pollution. The State Department of Environmental Conservation (DEC), with the U.S. Coast Guard, launched a cruise ship initiative in December 1999.

The initiative began with meetings between the State, Coast Guard, Environmental Protection Agency, cruise industry and environmental groups in order to discuss the activities and operations of cruise ships, with a view toward an assessment of possible environmental issues. When the workgroups realized there was little technical data to support industry claims they developed a scheme for sampling wastewater from cruise ships and for monitoring air emissions. Participation was voluntary. Thirteen of twenty-

four ships refused to participate, choosing instead to go beyond twelve miles to dump raw sewage without monitoring and without limitations.

The findings from monitoring during the summer of 2000 were, in the words of Alaska's governor, "disgusting and disgraceful." Concern was raised about both wastewater and air emissions. The results led in December 2000 to introduction by Alaska's Senator Frank Murkowski of federal legislation that prohibited discharge of raw sewage in specific areas of Alaska's Inside Passage and set standards for discharge of treated sewage. Vessels with AWTSS that were tested and certified to meet minimum standards were permitted to discharge treated sewage and grey water as close as one mile from shore and at speeds less than six knots.

Monitoring results also produced a response from the state. In March 2001 Alaska Governor Tony Knowles introduced legislation that would enforce state clean-air and -water standards for cruise ships and that would have monitoring and inspections, which would be funded by a one dollar fee per passenger. The legislation took effect July 1, 2001.

The Alaskan law was not more stringent than current U.S. law regarding the disposal of sewage or pollution from smokestack emissions. But it was unique in that it established enforceable standards and included a verified program of sampling, testing and reporting of wastewater and air discharges. Alaska became the first U.S. state with the authority to inspect ships, prosecute violators and regulate air pollution as well as sewage.

Alaska's Cruise Ship Initiative, as it was called, also established a scientific advisory panel to evaluate the effectiveness of the law's implementation and to advise the state on scientific matters related to cruise ship impacts on the Alaskan environment and public health. In February 2004 the state reported that the standards had prompted large ships to either install advanced wastewater treatment systems that meet the effluent standards or to manage wastes by holding all of their wastewater for discharge outside of Alaskan waters (beyond three miles from shore).

In 2006 Alaska took another major step when, as a result of a citizen's ballot initiative, it required cruise lines to pay a corporate income tax on casino revenues plus \$50 for each passenger entering the state. The initiative also increased fines for wastewater violations, mandated new environmental regulations for cruise ships, such as a state permit for all discharges of treated wastewater and introduction of environmental observers (ocean rangers) on all cruise ships in state waters. Revenues from the taxes would be disbursed to local communities affected by tourism and would fund public services and facilities used by cruise ships. Supporters of the initiative contend that the cruise industry does not pay enough in taxes to compensate for its environmental harm to the state and for the services it uses. Opponents argued that the initiative would hurt Alaska's competitiveness for tourism. The cruise

industry worked hard to defeat the legislation, first at the ballot box (a campaign that reportedly spent more than \$2 million) and later in the courts, but was unsuccessful. Elements of the ballot initiative continue to be fought over in the Alaska legislature.

The Case of Canada

It is interesting that while Alaska raised its standards for cruise ships and increased its enforcement and Washington signed a MOU that it believed had comparable effects, the government of Canada remained relatively passive, essentially looking the other way. In January 2003 the cruise industry publicly announced at a community forum in Monterey Bay, California, that it was working with Canada on a voluntary set of regulations. This was the first public disclosure that such a plan was in the works. The Canadian Centre for Policy Alternatives subsequently issued two reports challenging the guidelines and questioning a wholly voluntary approach (Klein 2003a, 2003b). Issues were also raised by the Georgia Strait Alliance and Vancouver Island Public Interest Research Group (see Gorecki and Wallace 2003). Some minor changes were made.

A year later, in January 2004, Transport Canada issued *Pollution Prevention Guidelines for the Operation of Cruise Ships under Canadian Jurisdiction*. The guidelines were voluntary, essentially stating Canada's expectations for the industry. There was no mechanism for monitoring or enforcement, leaving the status quo unchanged. Transport Canada replaced the guidelines with regulations in May 2007, which again lacked a mechanism for monitoring cruise ships and therefore for enforcement of stated standards.

The government appears to have a longstanding belief that cruise ships don't discharge wastes in Canada. There are violations in Alaska and violations in Washington but somehow the same cruise ships clean up their act when they are in British Columbia. It is possible but unlikely. The industry's own data casts some suspicion. Maps produced as part of a 2006 study commissioned by ICCL and conducted by Conservation International show discharges close to shore and within close proximity to Marine Protected Areas in B.C.'s inside passage (OCTA 2006: Appendix 2: 20, 21). As well, known violations on both coasts of Canada appear to have been effectively ignored.

Given the state of affairs, Denise Savoie and Peter Julian, NDP members of Parliament from British Columbia, called on Canada's federal government to begin work on a clean cruise ship act. They held a press conference in June 2007 to announce their initiative, which included Private Member's legislation calling for hearings in Parliament. No government action followed.

The cruise industry opposed the initiative, stating that it didn't need any more regulation, especially in view of its exemplary environmental record.

As in the past, it said “it has considerably less impact on the environment than cities like Victoria that still dump raw sewage into our coastal waters” (Shaw 2007). To some the industry’s opposition to the initiative is surprising. If their behaviour is so environmentally sensitive and responsible then the obvious question is why they wouldn’t embrace legislation that sets regulations consistent with practices they claim are already in place. Without a strong environmental movement behind Savoie’s and Julian’s efforts, it didn’t go far.

South of the Border

The concept of a clean cruise ship act first surfaced in the United States in the early 2000s. Then in April 2004 Senator Richard Durbin (with nine co-sponsors) and Representative Sam Farr (with forty-two co-sponsors) introduced in the U.S. Congress a bill that would regulate wastewater discharges from cruise ships in U.S. coastal waters. The legislation was free-standing and would not require U.S. ratification of Annex IV of MARPOL (*Regulations for the Prevention of Pollution by Sewage from Ships*), an Annex that came into force September 27, 2003, but from which the U.S. continued to withhold its consent. Without U.S. support it had taken nearly thirty years for Annex IV to be ratified by more than seventy-five countries representing more than 50 percent of the world’s ocean going ship tonnage.

The provisions of the *Clean Cruise Ship Act* were much more stringent than MARPOL. Cruise vessels entering a U.S. port were prohibited from discharging sewage, grey water or bilge water into waters of the United States, including the Great Lakes, except in compliance with prescribed effluent limits and management standards. It directed EPA and the Coast Guard to promulgate effluent limits for sewage and grey water discharges from cruise vessels that were no less stringent than the more restrictive standards under the existing federal law regarding Alaska’s Inside Passage. The legislation also sought to broaden federal enforcement authority, including inspection, sampling and testing.

In effect, the *Clean Cruise Ship Act* would require all cruise ships discharging in U.S. waters (within two hundred miles) to have an advanced wastewater treatment system and would subject these systems to regular monitoring and testing; no discharge would be permitted within twelve miles of the coastline. The legislation failed to move out of Committee in 2004; it was reintroduced in 2005 and again failed to be considered before the end of that session of Congress. It was redrafted and reintroduced in April 2008. The new legislation would prohibit discharge of sewage, grey water and bilge water within twelve miles of shore. For discharges beyond twelve miles the Environmental Protection Agency will be charged with standards based on the best available technologies.

Cruise industry groups opposed the legislation, arguing that it targeted an industry that represents only a small percentage of the world's ships and that the industry's environmental standards already meet or exceed current international and U.S. regulations. Conservation International (CI) was enlisted in a joint project that effectively "green washed" the cruise industry to bolster its case (see Klein 2005a: 150–156). With funding from the International Council of Cruise Lines, CI's Centre for Environmental Leadership in Business issued a report in March 2004 complimenting the industry on its environmental record and leadership. In December of that year the industry funded CI's Ocean Conservation and Tourism Alliance (OCTA).

The OCTA focused on four priority areas: best practices for wastewater management, establish destination partnerships, promote environmental education and promote vendor environmental education. Except for best practices for wastewater management, which essentially encouraged the industry to continue its installation of advanced wastewater treatment systems (despite opposing similar calls from environmental organizations such as Bluewater Network and Oceana), OCTA's priorities dissuaded attention from cruise industry practices. Instead they focused on what could be done by those on land, such as ports, to improve the cruise industry's environmental impact; or placed the industry in context as a smaller threat to the health of the oceans than things such as runoff from farming in the U.S. Midwest. OCTA activities proved to be excellent as a public relations campaign.

While opposed by the industry, the *Clean Cruise Ship Act* was actively supported by a broad-based coalition of environmental groups that were at the core of the move for its promulgation and introduction (see Klein 2007a). Some of these groups were national in scope, such as the act's key proponents: The Ocean Conservancy, Oceana and Bluewater Network; others had mainly a local focus. As the cruise industry has continued to project a more positive image, environmentalists' interest in cruise ship issues and the *Clean Cruise Ship Act* have waned. Since 2006 many national environmental organizations in the U.S. have shifted to what they perceive to be higher priorities or to areas that foundations and other organizations are willing to fund. Local organizations are consequently left even more on their own. It is still useful to take a glimpse at those involved in the campaign for the *Clean Cruise Ship Act*.

Environmental Organizations and the Clean Cruise Ship Act

One of the first organizations to openly criticize the cruise industry's environmental practices was The Ocean Conservancy (TOC). Formerly known as the Centre for Marine Conservation, TOC became directly involved with cruise industry issues when it released in May 2002 *Cruise Control: A Report*

on *How Cruise Ships Affect the Marine Environment*. Royal Caribbean, which had provided a grant of \$450,000 (\$150,000 per year for three years) through its Ocean Fund for TOC's non-cruise ship projects, expressed its "disappointment and dismay" over the report and withdrew funding from The Ocean Conservancy's projects. In contrast to the publicity given when the grant was awarded no publicity or press release was issued when funding was withdrawn. In correspondence to the president of TOC Royal Caribbean criticized the report and said, "You have dredged up and unloaded upon the public a bucketful of mostly tired, old accusations and downright inaccuracies about present day environmental practices and impacts." Royal Caribbean had tried unsuccessfully to quash TOC's publication of the report.

The Ocean Conservancy engages in both national and local activities. Its field offices in Monterey Bay (California) and Key West (Florida) were key players in local initiatives to contain and prevent cruise ship pollution in adjacent national marine sanctuaries. In Monterey Bay specifically, a partnership that included TOC, Friends of the Sea Otter and Save Our Shores was a critical force protecting the sanctuary and in taking decisive action against violators.

Vancouver-based Oceans Blue Foundation (OBF) was involved with cruise industry issues well before TOC but by 2003 had become marginalized. The OBF was established in 1996 through a cooperative effort involving the Vancouver Port Authority, Tourism Vancouver, Tourism British Columbia, the Canadian Tourism Commission and private foundations and business leaders in British Columbia. A key project was the OBF's Cruise Ship Stewardship Initiative. The initiative focused on a plan whereby the cruise industry would voluntarily adopt standards of environmentally responsible tourism. The OBF planned to implement an eco-certification program that would identify and reward cruise lines that took meaningful and positive steps. This was at the forefront of the international wave to establish green certification of travel and tourism products.

The OBF held a series of meetings with environmentalists and the industry and in 2002 convened a roundtable involving representatives of the cruise industry and environmental organizations. The OBF hoped it could influence the industry's environmental practices. However, increasing dialogue led the organization to believe the cruise industry was insincere in its talk of changing practices and instead was using the cooperative process to undermine the OBF's efforts. As the organization learned more about the industry's practices and experienced the industry's political games (including the industry's use of Canada-based David Suzuki Foundation (see Klein 2003b: 8)) it became more confrontational. In October 2002 the OBF published *Blowing the Whistle and the Case for Cruise Ship Certification*, a report that directly confronts contradictions between industry claims and practices. The OBF lost most of its funding.

Tourism Vancouver criticized the report and said “There are better ways of being able to encourage that kind of discussion and debate,” that the matter would be raised with the Canadian Tourism Commission (CTC) and that Tourism Vancouver would consider ending support for the OBF. An official with the CTC was also critical, suggesting that “the CTC supports a balanced approach between environmental protection and economic development” (Tjaden 2002). The OBF closed its doors a year later. A follow-up to the October 2002 report, completed in September 2003, was never published.

San Francisco-based Bluewater Network was another key player in pushing for the *Clean Cruise Ship Act*. It has been on the forefront of environmental activism related to the cruise industry since the late 1990s. It merged with London-based Friends of the Earth in 2005. Bluewater Network has used a mix of strategies in its efforts. It used the courts to pressure the U.S. Environmental Protection Agency to promulgate regulations to control vessel emissions, to force cruise lines to stop their habitual violation of laws prohibiting the discharge of ballast water in California waters and in 2003/2004 (and again in 2007) to challenge EPA standards for air emissions from ships. It also engages in political lobbying. Bluewater Network was successful in 2003 in having enacted two of three bills it sponsored in the California legislature; it sponsored three bills that were enacted in 2004. This legislation, discussed earlier, regulated grey water, black water, incinerator usage, sewage sludge, hazardous waste and oily bilge water. And teaming with San Franciscans for a Clean Waterfront, Bluewater Network was involved in ensuring sufficient environmental protections around construction of a new cruise terminal in San Francisco. Friends of the Earth continues to seek regulations for cruise ship discharges and is focused on both the legislative front and the judicial front as a means for pressuring the EPA to finally issue regulations for cruise ship waste streams.

Bluewater Network/Friends of the Earth also supports efforts of organizations in other jurisdictions. It participated in a lawsuit in Washington State following discharge of raw sewage in Puget Sound by Norwegian Cruise Line, brought to light cruise line violations of emission standards set by the Port of Seattle and has engaged in public education and social action campaigns in San Francisco, Seattle and nationally. In Seattle it partners with Ocean Advocates, an environmental organization that actively monitors and comments on development in the port, especially those involving the cruise industry.

The most recent actor on the scene is Oceana. Established in 2001 with funding largely from the Pew Charitable Trusts, Oceana merged with the American Oceans Campaign in 2002. It identified cruise ship pollution as one of its key areas of interest and undertook a cruise ship campaign in early 2003. Similar to the OBF, Oceana began by collaborating with the cruise

industry. It engaged in discussions with Royal Caribbean Cruises Limited (operator of Royal Caribbean International and Celebrity Cruises) and asked for a commitment to upgrade wastewater treatment systems. At the same time Oceana engaged in public education and mild forms of social and political action.

Discussions between Oceana and Royal Caribbean broke down in July 2003. In Oceana's words they had been negotiating with Royal Caribbean; Royal Caribbean said it had engaged in meetings as part of its routine outreach to interest groups, environmental organizations, academic institutions and others (Londner 2003). Oceana launched a media campaign beginning July 21, 2003, and held rallies and media events in several cities across North America. The CEO of Royal Caribbean issued a form letter on September 24, 2003, responding to letters he received as part of Oceana's campaign. He clearly stated that the company discharged its black water and its grey water "only when we are 12 or more miles from the shore and moving at at least 6 knots." The letter proudly promoted Royal Caribbean's policies and procedures for exceeding Coast Guard requirements and as more strict than U.S. law requires. These claims appear to contradict a State of Hawai'i report in December 2003. It cites the company for twelve violations of a memorandum of understanding that prohibits discharges within four miles of the coast (Yamanouchi 2003).

Oceana escalated its campaign in October 2003, calling for a national boycott of Royal Caribbean, and in February 2004 placed advertisements for its cruise ship campaign on Google.com. After two days the ads, which did not mention Royal Caribbean by name, were banned. Google claimed that the ads violated its editorial policy, which prohibits ads criticizing other groups or companies. The ads reappeared two weeks later on Yahoo. In May 2004 Royal Caribbean announced a commitment to install AWTSS on all of its ships by 2008—exactly what Oceana was calling for. But RCCL said that Oceana's campaign had nothing to do with its decision. At the start of 2008 twelve of Royal Caribbean International's nineteen vessels and two of Celebrity Cruises' eight vessels did not have an AWTSS. Oceana had already moved on to other issues after winning and scarcely took notice.

One other national organization involved with advocating for the *Clean Cruise Ship Act* was the Campaign to Safeguard America's Waters (C-SAW). Like Bluewater Network, the C-SAW began as a project of Earth Island Institute. It is dedicated to closing loopholes in federal and state water pollution regulations that allow millions of gallons of polluted wastes to be dumped into public waters and is actively engaged in the debate about the use of mixing zones to circumvent water quality standards. The cruise industry advocates thinking in terms of mixing zones, in effect saying "dilution is the solution" to discharge of its wastes.

The C-SAW's efforts around water quality standards and the EPA are national in scope (including efforts to include cruise ships under the *Clean Water Act*). However the campaign is also intimately involved in Alaska's efforts to contain and control pollution produced by cruise ships. The organization's founding is related to discharge of hazardous chemicals (dry cleaning fluids, photofinishing chemicals, and more) in Alaska's Inside Passage, including waters around Haines, on which the Campaign's founder had depended for salmon. The C-SAW was a key player in the Alaska Cruise Ship Initiative in 1999/2000 and in the 2006 Alaska ballot initiative, which created a \$50 per passenger fee on cruise ships using Alaska's waters.

Several local organizations were also intimately involved in discussions leading to the *Clean Cruise Ship Act*. These included Friends of Casco Bay, which was instrumental in pushing for legislation in Maine; Ocean Advocates, which is a key player in Washington state; and KAHEA, The Native Hawaiian Environmental Alliance, which has been behind a number of efforts and public education campaigns in Hawai'i (see Klein 2007a).

Since a peak in 2003 national organizations' interest in cruise industry environmental practices has subsided. Except for Bluewater Network/Friends of the Earth, the major national organizations have moved on to other issues and maintain a relatively small interest if any in cruise tourism. Most successful efforts in recent years have been initiated by local organizations motivated by local issues and concerns.

It Isn't Just Environmentalists

Environmental concerns go beyond those normally focused upon by environmental organizations. Cruise ships also present a problem of people pollution—overcrowding—in the places they visit. Ports in Europe can see as many as ten ships in a single day, leading one journalist to observe:

It's an unfortunate fact but the popular spots on Europe's cruise trail have become nightmare destinations—both for the locals, unless they live on tourists, and the hapless cruise passengers who suddenly find themselves in a maelstrom of humanity. (Archer 2007)

The number of ships and passengers is even higher in some Caribbean ports. A single port can receive 25,000 passengers or more in a single day, numbers that take their toll on local communities—not just wear and tear on the physical environment but on the people who live there year round. Consider Cozumel, Mexico, where in 2004 an average 9,000 cruise ship passengers visited per day. Because the distribution is not consistent from one day to the next there are quiet days and huge spikes. For example, on December 26, 2002, the port received its all-time record—approximately

38,000 cruise ship visitors.

Problems caused by huge numbers of cruise passengers led to community-based citizen action in Key West, Florida. Cruise passenger numbers had risen sharply from 375,000 in 1995 to close to a million in 2004. Many on the two-by-four-mile island saw cruise tourism as a major reason for the “getting ugly” label assigned by *National Geographic Traveler’s* 2004 “Destination Scorecard.” Key West scored forty-three out of one hundred (it received forty-six points in 2007).

Concerns extended beyond the congestion at tourist attractions, the kitschy shops that had sprung up around the port, the disruption caused by Conch Trains running cruise passengers around the town and the assertion by *National Geographic Traveler* that the city’s character was lost. Restaurant and hotel owners saw that cruise tourism was displacing people who in past would stay at a hotel for a week, spend money in restaurants and bars and shop in the stores. The president of the Lodging Association of the Florida Keys and Key West says cruise passengers change the nature of a destination.

Our whole advertising and marketing program is around Key West being an easy-going, laid-back, relaxed destination with interesting shops and stores and great cultural and historical resources.... Put yourself in the position of a visitor who comes for the first time, checks into one of our fine hotels, and then decides to take a stroll down this town’s main drag—Duval Street—and encounters crowds more reminiscent of Times Square. (Babson 2003)

Citizens in Key West directly confronted the problem in January 2003. A grassroots organization, Liveable Oldtown and its political action arm Last Stand, held a panel discussion entitled “Keys in Balance,” which looked at the good, the bad and the ugly of cruise ships in Key West. While acknowledged that cruise ships generate approximately \$2.5 million in disembarkation and docking fees for the city’s yearly budget, there were questions about the impact of cruise ships on the fragile marine environment surrounding the lower keys, the risk of dependence on cruise ship dollars and the social impact of thousands of cruise passengers pouring into town each day. The overarching question was stress on Key West’s 27,000 residents from the daily influx of cruise ship passengers. A public education and political action campaign followed from the forum.

Anger peaked in March 2004 when local residents learned that the city had been violating a 1993 resolution that placed a limit of seven cruise ship visits per week at Pier B—a privately owned dock adjacent to the Hilton Hotel. Liveable Oldtown called for a protest on March 11, 2004, when there would be five ships visiting the city. They encouraged residents to drive up

and down Duval Street between 11 a.m. and noon. Though cruise passengers barely noticed the added congestion the point was well made with city residents and city councillors by the hundred or so protestors (see O'Hara 2004).

The protest had the desired effect. Solidarity increased in calls from the community to cutback cruise tourism. The city was forced to address the concerns, which a year later were leant support by a city-funded quality of life study (see Murray 2005). City councillors who favoured scaling back cruise tourism were elected following the study's release, and the city began reducing cruise passenger numbers.

Half a world away in Gold Coast, Australia, another community-based action took on problems associated with cruise tourism. The Queensland government in 2004 announced plans to build a cruise terminal on the spit overlooking the entrance to the bay where Surfer's Paradise sits. A broad-based coalition of business, recreational users of the area and environmental interests joined together and formed Save Our Spit. Though comprised of groups with sometimes diverse and competing interests the organization's sole purpose was to prevent construction of a cruise terminal and to preserve the spit for recreational boaters, surfers and citizens who would spend a leisurely day out in Douglas Jennings Park. Its efforts also reflected concern about over-blown expectations for income from cruise tourism and displacement of an already thriving tourism industry. A two-year fight included public rallies, community education campaigns and lobbying of state and federal governments.

Success appeared elusive but an election call in 2006 led to the main election campaign period coinciding with an already planned major event. An international expert was brought in for press conferences and media work, and Save Our Spit planned a rally expected to attract more than 5,000 people. Two days after the media blitz began and a day before the rally the Queensland Government announced it was cancelling plans for the cruise terminal. Save Our Spit had succeeded. Its success, like the success of citizens in Key West, is attributed in large part to the fact that the organization and effort had a single focus and goal. As a result it could not be sidetracked or bought off by competing interests or trades that would give concessions on a different issue. Though coalition partners were approached with deals that gave them individual concessions on others issues, Save Our Spit as the collective organization couldn't be bought and remained steadfast (see Johnston and Gratton 2008).

A grassroots coalition in Moloka'i, Hawai'i (Hui Hoopakele Aina) similarly had a single focus and, like Save Our Spit and Liveable Oldtown, realized its goal. With concern about negative environmental, economic and social impacts from cruise tourism, the group challenged plans for cruise ship

port calls in 2002 by taking the State of Hawai'i to court over its failure to undertake a full environmental impact assessment. Local residents holding placards and chanting that the passengers were not welcome met the first ships planning to stop. The first two calls were cancelled in the face of this public display. Future calls were also cancelled. Some in the know suggest there was a negotiated settlement between the State and industry in order to make the lawsuit and demonstrations go away (Klein 2005a). In any case, Moloka'i remains free of cruise ships.

And on an ongoing basis, James Bay Neighbourhood Environmental Association in Victoria, British Columbia, keeps a watch on environmental impacts from cruise ships docking at the city's Ogden Point. The James Bay community is concerned about air quality on cruise ship days, both from ship emissions and from increased vehicle traffic for passenger and crew tours and taxis. The organization engages in public education, conducts community forums and regularly engages in discussion with the port. With a relatively singular focus on their community the neighbourhood organization has reasonable impact and visible successes.

Bar Harbor, Maine, has also taken a proactive approach. After hearing complaints from residents and business owners that passengers from cruise ships overcrowded downtown the town council voted in January 2008 to restrict the number of passengers that can disembark at one time: 3,500 in July and August; 5,500 from May through October. The decision effectively limits one ship per day during the peak summer months, a sensible approach that attempts to keep cruise passengers from overwhelming other forms of tourism.

The Environmental Debate

The chapter began with the cruise industry's assertion of environmental sensitivity and responsibility. The claim is laudable but put into context, it is one that must be viewed with scepticism. The problem isn't only the volume of wastes produced by a cruise ship but the industry's tendency to put economic interests above environmental concerns. Decisions about wastewater treatment systems are influenced by space considerations, including the loss of onboard space that could otherwise be used for revenue, and are not guided by a commitment to have a system that produces effluent comparable to major U.S. cities. The industry's claims of drinking water quality sound good, but they would be more convincing if they were true.

A key element of the cruise industry's defence around environmental issues is that cruise ships are a small part of the problem; they are a relatively small proportion of all ships on the world's oceans. This argument is reasonable in consideration of shipboard wastes that cruise ships have in common with all ships: oily bilge water, ballast water and emissions from burning fuel.

But other waste streams, such as solid waste (including incinerator emissions), toxic waste from photo processing, printing and other onboard consumer related services, and the volume of both grey and black water create issues unique to a cruise ship because of the size of its human cargo.

The cruise industry has an ongoing problem of credibility. Past behaviour doesn't correspond with pronouncements about environmental responsibility and commitments to protection. And the industry's word doesn't follow in action. Changing positions on fuel usage is an excellent example. When it suited its purpose the industry agreed that ships using a new terminal in Seattle would use low sulphur fuels but it didn't follow through on its promise. The reversal became known some time later when California sought, through legislation, the same practice it understood to be in place in Seattle. Or take Holland America Line, which, when it announced installation of saltwater smokestack scrubbers to reduce the environmental impact from fuel, unabashedly told the media that it used fuel with less sulphur content in the Pacific Northwest (1.8 percent) than on the exact same ship when it was deployed in the Caribbean (3 percent). The duality (using poorer grade fuel in the Caribbean versus Alaska) undermines a claim of sincere environmental concern. Perhaps more illustrative is that cruise ships in Hawai'i typically burn fuel with a sulphur content ranging from 1.4 to 2.5 percent, while land-based power plants in contrast burn mostly 0.5 percent sulphur fuel (Eagle 2008).

A common way for the industry to counteract criticism is to say, "We meet or exceed all international and local regulations." It is a claim that is mostly true, but it needs to be seen in light of the industry lobbying against more progressive rules and regulations. It doesn't embrace efforts to extend greater protection to the environment, and it minimizes the issue by saying that cruise ships are only a small part of a much larger problem. The industry dissuades focus from cruise ships as unique in terms of the volume of people onboard and the volume of waste produced. In contrast to cities, which have high standards for discharge of wastewater and disposal of solid waste based in enforceable rules and regulations and which often includes systematic monitoring, the cruise industry operates largely in a system of voluntary arrangements in which they police themselves. The rules and regulations that apply when they are in international waters are those of the flag state, maybe half a world away. Like prosecution of sexual assaults, prosecution for environmental offences are difficult and made complex by the foreign-flagged status of the ship.

The largest volume of waste discharged into the oceans consists of black and grey water. The cruise industry's view on these effluents is simplistic: dilution is the solution. The basic concept is the oceans are so vast and huge that a little bit of sewage or grey water will be quickly assimilated and won't make

much difference. The argument makes intuitive sense until consideration is given to the fact that many ships follow the same routes, so it isn't just one ship discharging but, in the case of Alaska, twenty-seven ships discharging along the same routes every day. The matter is even worse in the Caribbean and elsewhere. Advocates of "dilution is the solution" ignore cumulative effects, which are also relevant for air emissions, especially while ships sit stationery in harbours and as they transit to and from a cruise terminal.

In addition to the environmental impacts from normal operations of cruise ships there are risks when a ship has an accident or when it sinks. Take for example the year 2007. In January Hurtigruten's *Nordkapp* discharged as much as 750 litres of fuel oil when it scraped bottom near Deception Island in Antarctica causing an eighty-two foot gash in the ship's outer hull. Three months later in the Mediterranean Louis Cruises' *Sea Diamond* sunk off Santorini and discharged more than 300 tons of fuel oil—it contained some 450 tons of fuel and lubricants on board (see *Shanghai Daily* 2007). About ten weeks later, in July, the Spanish passenger ferry Don Pedro sunk after striking a tiny barren island one mile from Ibiza. The ship had 150 tons of diesel fuel in its tanks, which were reported to be leaking. Then in September the cruise ship *Dream* was detained in Rhodes after it severely listed and discharged sewage. An inspection found that holding tanks had overflowed and caused the spill; the ship had more than 3,000 tons of waste that had to be pumped out. And in November the expedition ship *Explorer* hit ice and sank 120 kilometres off the Antarctica peninsula, leaving an oil stain five by eleven kilometres in length and debris; the ship had onboard 185,000 litres of fuel oil, 24,000 litres of lubricant and 1,000 litres of gasoline. The hundred passengers and fifty-four crew boarded lifeboats and were rescued within hours. There were no injuries. In December Norwegian Cruise line's *Norwegian Dream* collided with a cargo ship as it left Montevideo, causing automobiles and containers with chemicals to be dumped into the harbour.

There are more than the obvious pollutants when a ship sinks. A major concern expressed by the Greek government over the *Sea Diamond* is the number of hydraulic and air conditioning systems that contain toxic liquids and the hundreds of television and computer screens in the vessel that could leak arsenic and other harmful substances. Similar concerns were raised after *Explorer* sank off Antarctica.

As much as the cruise industry would like its ships to be seen as innocuous and posing no threat to the environment, a careful accounting suggests cruise ships should be a serious concern for all of us. The growth of cruise ships and cruise tourism needs to be managed, and regulations and laws need to be tightened and enforced.

A good example is Antarctica, where cruise tourism is growing exponentially. In the 2002–2003 season (which runs from November to March) 13,500

people travelled to Antarctica. In 2006–2007 the number had increased to 35,000—a 160 percent increase in just four years. Many cruise tourists visit the area on larger ships offering cruise-only tours to the peninsula which allow passengers a view of icebergs from the comfort of heated cabins and lounges but not trips ashore. Princess Cruises’ describes its Antarctica and South America trip as scenic cruising involving glaciers, penguins and a dazzling landscape. It makes no mention that Antarctica remains a thoroughly hostile environment, prone to savage storms, sub-zero temperatures even in summer and howling winds of up to 320 kilometres per hour. Though these larger ships offer many luxury extras, most are built for cruising in warmer waters and lack ice-hardened hulls. Aside from the issue of safety, consider the daily volumes of grey water (1.4 million litres), treated sewage (120,000 litres) and solid waste. Just as it takes lots of money to build a ship with a reinforced hull, an expense cruise lines are reluctant to take on, it costs money to effectively reduce the footprint of a cruise ship in any environment, but particularly in the sensitive and pristine environment of Antarctica.

Before You Embark

The first question before embarking on a cruise ship is whether you still want to go. The environmental issues and the impacts of cruise tourism may cause you to choose a different type of holiday. One issue is air emissions. Travel by plane contributes less CO² than a cruise ship. According to a report prepared by Intertanko, global emissions from shipping are twice the level of aviation (McGrath 2007). The Port of San Diego further estimates in a September 2007 report that cruise ships create more air pollution than anything else in its waters.

They emitted more nitrogen oxides than any other type of ship—more than 500 hundred tons per year. Combined with freight and cargo ships, they produce more greenhouse gases than any other port-related sector. (Fox 2007)

If a cruise is still your vacation choice, then it makes sense to support efforts to force government bodies such as the U.S. Environmental Protection Agency to regulate emissions from cruise ships and to support local government initiatives such as one in Seattle that is considering a plan for cruise ships to offload sewage sludge for onshore treatment at the county waste plant (see Bolt 2007). This isn’t a matter of shutting the cruise industry down but of citizens and governments undertaking initiatives that force cruise ship operations to significantly reduce their ecological footprint.

Passengers are potentially valuable as witnesses of environmental violations. It isn’t rocket science to see an oily sheen on the ocean surface,

discolouration of water from discharge of ash or liquid waste or to watch for solid waste being tossed overboard. Taking a picture of these violations can be rewarding given that U.S. law rewards passenger informants with one-half of fines collected for environmental violations in U.S. waters. A couple earned \$250,000 for photographs showing garbage bags being tossed overboard from *Regal Princess* in 1993. And a ship's assistant engineer was given \$500,000 for reporting to authorities the illegal discharge of oily bilge water from *Rotterdam* in Alaska's Inside Passage in 1994. Keep your camera handy. The problem however is when garbage or other discharges are thrown in the seas outside U.S. jurisdiction. There is no MARPOL police. Enforcement is the responsibility of the country where the ship is registered; few of these countries are likely to take any action.

Passengers can also be instrumental in changing cruise industry practices by letting companies know they will not tolerate harmful environmental practices and by supporting politicians who put forward initiatives for enforceable regulations with active monitoring. They can also actively choose ships that are relatively cleaner environmentally (by having an AWTS) and shun ships with outdated technology. This strategy depends on information being available so consumers can make fully informed choices. Information (somewhat like crimes) the cruise industry doesn't readily share.

Like any business, the cruise industry has making money as its primary goal. It does what it can to maximize profits and to minimize the costs associated with behaving environmentally responsible. Behaviour is most likely to change when economic disincentives derive from irresponsibility. Fines are one type of disincentive. Another is when passengers go elsewhere with their vacation dollars because of environmental policies and practices.