

## Ship scrubber washwater discharges and their impact on Caribbean ports

A rapidly growing number of ships are being fitted with exhaust gas cleaning systems, or “scrubbers,” as a way to comply with the International Maritime Organization’s (IMO) 2020 global fuel sulfur limit. Scrubbers remove sulfur from ship exhaust by spraying a buffer solution (usually seawater) over it and then discharging the washwater overboard, often without treatment. The washwater is more acidic than the surrounding seawater and contains polycyclic aromatic hydrocarbons (PAHs), particulate matter, nitrates, nitrites, and heavy metals including nickel, lead, copper, and mercury.

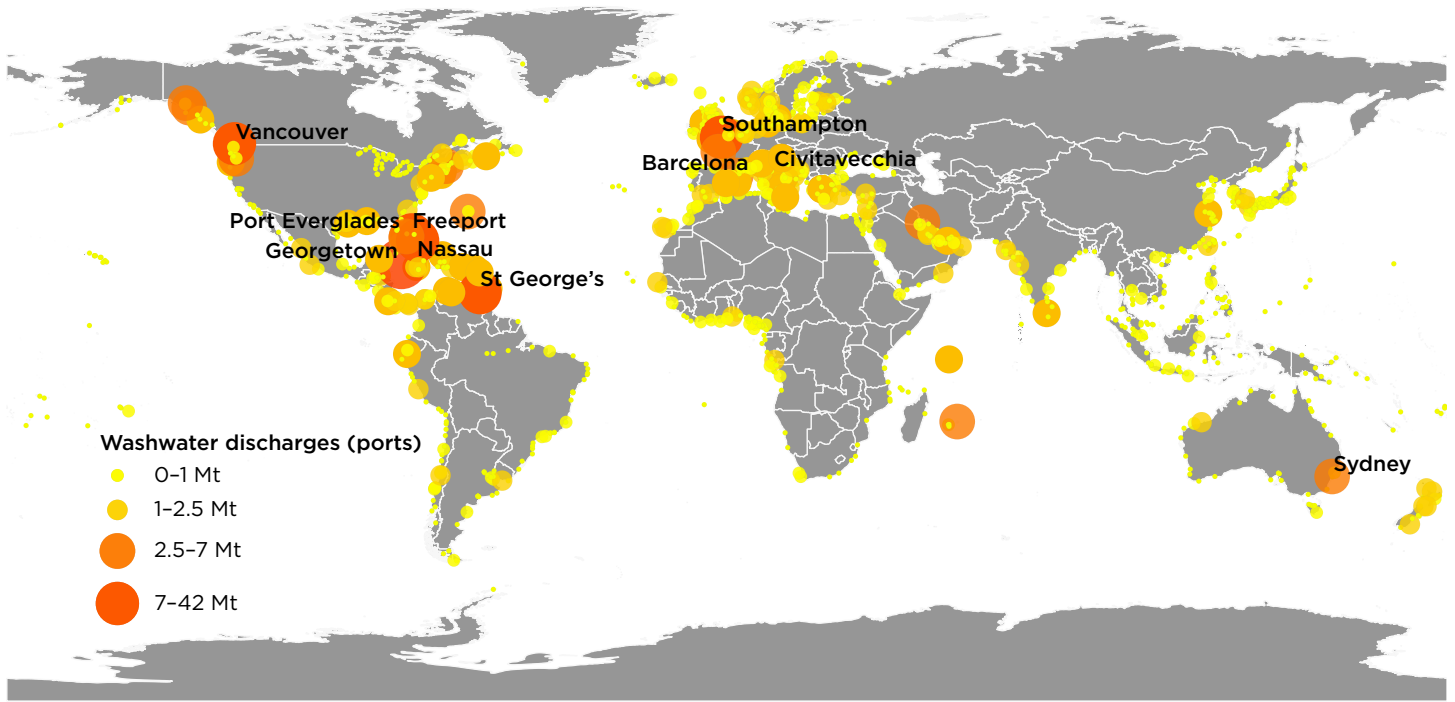
Caribbean ports will be particularly affected by the impacts of this compliance pathway on the marine environment (see map below). A new ICCT report assessing global washwater discharges from ships equipped with scrubbers finds that in a typical year for global shipping, nearly 300 million tonnes (Mt) of scrubber washwater is expected to be discharged in major ports worldwide. But a disproportionate share of those discharges will occur in the Caribbean because of the large number of cruise ships sailing the region.

### HOW MUCH WASHWATER IS EXPECTED IN CARIBBEAN PORTS?

- » **Georgetown, Cayman Islands:** 41.8 Mt, 100% from cruise ships. This alone is 14.1% of all discharges in port globally.
- » **Freeport, Bahamas:** 5.5 Mt, 74% from cruise ships
- » **Nassau, Bahamas:** 4.8 Mt, 99% from cruise ships
- » **Port Everglades, United States:** 3.2 Mt, 98% from cruise ships

### WHY IS THE CARIBBEAN ESPECIALLY AT RISK?

Scrubber washwater is hot and acidic and is discharged in areas with coral reef systems that are already impacted by ocean warming and ocean acidification. Washwater discharges are also expected in several IMO-designated Particularly Sensitive Sea Areas (PSSAs) around the world, including the Florida Keys (USA), Sabana-Camaguey (Cuba), and Saba Bank, (Caribbean Netherlands). The Florida Keys PSSA is meant to be protected because it contains threatened coral reef systems and it faces more than 2 Mt of discharges annually. The United States currently only restricts scrubber use at ports in California, Connecticut, Hawaii, and Seattle, Washington.



**Figure 1.** Scrubber washwater discharges within 1 nautical mile of port.

## CONTRIBUTIONS FROM CRUISE SHIPS

Cruise ships account for 96% or more of discharges in seven of the 10 ports with the highest total washwater discharges in the world. In large part, this is because cruise ships stop and idle at ports for 25% of their operating time. Additionally, when in port, the study finds that cruise ships are burning more fuel because they consume an average of three times more energy per hour than oil tankers, and six times more than container ships.

## IMPACT OF CURRENT REGULATIONS

The study finds that policies in place as of June 2020 already avoid 421 Mt of scrubber discharges in the national waters and ports of 16 countries, and these prevent more than half of the washwater that would have otherwise been discharged in these countries' waters. Until and unless scrubber discharge is outlawed internationally by the IMO, national and sub-national governments like those in the Caribbean can take action by joining other countries and banning the scrubber discharges in their territorial waters. Singapore and Egypt, for example, were among the first nations to ban washwater in their ports, and this action helped to reduce washwater discharges in their territories by 69% and 67%, respectively.

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**Authors:** Liudmila Osipova, Ph.D., Elise Georgeff, and Bryan Comer, Ph.D.

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**Contact:** Liudmila Osipova, [l.osipova@theicct.org](mailto:l.osipova@theicct.org); Bryan Comer, [bryan.comer@theicct.org](mailto:bryan.comer@theicct.org)

[www.theicct.org](http://www.theicct.org)

[communications@theicct.org](mailto:communications@theicct.org)

[twitter @theicct](https://twitter.com/theicct)

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