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Lyttelton's biggest cruise ship set to arrive, but what does it mean for the environment?

Amber Allott09:03, Nov 03 2022



Hamish McNeilly/Stuff

The Ovation of the Seas berthed at Port Chalmers in Dunedin on Wednesday.

Just days after welcoming its first big, international cruise ships in more than a decade, Christchurch's Lyttelton Harbour could host its biggest one ever – if the weather plays ball.

But uncertainty and concern remains when it comes to what environmental impacts they will have.

Local businesses celebrated last week when [the Celebrity Eclipse](#) and [the Grand Princess](#) docked at Lyttelton's new \$67 million berth on Thursday and Friday respectively.

Their arrival marked a new beginning after the February 2011 earthquake destroyed the city's cruise terminal. In the years since, [cruise ships had been rerouted to Akaroa](#) – a 90-minute drive away.

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The Ovation of the Seas is scheduled to arrive at the port on Thursday, carrying about 4180 passengers.

Lyttelton Port Company (LPC) says it will be the largest cruise ship to ever visit the port.

However, strong wind forecast for Thursday meant there was “a strong chance” the vessel would not be able to berth in Lyttelton, an LPC spokesperson said.

“If that’s the case, the Ovation of the Seas will be back in Lyttelton another five other times this season.”

Picton was humming on Wednesday as the port town welcomed back its first cruise ship since March, 2020.

The cruise ship season, which runs until April 10, 2023, will see 85 cruise ships berth in Lyttelton Harbour, carrying about 170,000 passengers and 35,000 crew.

Akaroa will host another 15 ships, carrying another 8000 passengers and 1000 crew.

While the cruise season is expected to inject \$262 million into the local economy, Crown research institute [Niwa has previously raised concerns about the environmental risk to Lyttelton Harbour.](#)

Most cruise ships visiting Aotearoa this season will be fitted with “scrubbers” – which are used to remove cheaper, high-sulphur fuel – switching to diesel or low sulphur varieties that meet emission limits when they have to.

The Ministry for the Environment has encouraged ships to use low-sulphur fuel, and says those fitted with open-loop scrubbers should discharge any washwater away from the coastline.

Burning fossil fuels containing sulphur creates sulphur dioxide, a greenhouse gas [considered dangerous to human and ecosystem health at high concentrations.](#) When removed with scrubbers, the sulphur ends up in the water, rather than the air.

Royal Caribbean says 70% of its ships have high-tech emissions purification systems installed.

Niwa says washwater discharges from open-loop scrubbers could be a risk to marine environments, with copper and chromium concentrations of most concern.

Niwa predicted they would exceed guidelines in Lyttelton, Tauranga and Auckland ports, and at Akaroa Harbour’s cruise ship anchorages.

Regional councils get to set the rules for scrubber discharges, and Environment Canterbury previously told *Stuff* it was a complex issue because by law, vessels could discharge “anything to do with propulsion of the ship,” but the council could stipulate what happened to those related to electricity generation.

None of the cruise vessels scheduled to visit Lyttelton could separate electricity and propulsion scrubber discharges, so they had to burn low-sulphur fuel.

“Before they get to the 12 [nautical] mile limit, we expect cruise ships to either be on a compliant fuel, or using a closed-loop scrubber.”

Royal Caribbean, which owns the Ovation, did not provide specific information on whether the Ovation used low-sulphur fuel in New Zealand, or what it did with washwater from scrubbers.

Its strategy was to power ships with liquefied natural gas (LNG), “the cleanest-burning fossil fuel currently available”, a spokesperson said.

According to a 2021 study, switching from heavy fuel oil to LNG could reduce greenhouse gas emissions by up to 22% by 2030.

LNG also removed more than 90% of their ships’ local sulphur oxide, nitrogen oxide, and particulate emissions at ports, they said.

By the 2021, 70% of Royal Caribbean’s vessels were equipped with advanced emissions purification (AEP) systems, which helped meet international maritime sulphur emission requirements.

AEP systems removed about 98% of sulphur dioxides, 40 to 60% of total particulate matter, and up to 12% of nitrogen oxides from their air emissions.

“The ships without AEP systems face technical challenges in fitting the systems or operate in areas where the use of heavy fuel oil is voluntarily not used or prohibited by law, such as the Arctic and Antarctic.

“Ships that are not fitted with an AEP use low-sulphur fuel.”

A recent study also found [Hector’s dolphin hotspots in Akaroa Harbour cooled down when cruise ship activity ramped up](#) after Canterbury’s earthquakes.

Study co-author Liz Slooten said there were already fewer dolphins in Lyttelton Harbour, at least in part because of “the much higher shipping traffic there”.

“The impact seen in Akaroa now would have already occurred many years ago in Lyttelton.”

But with all the vulnerable native species were already contending with, which could soon include “yachts going at 100km an hour” [when the harbour hosts Sail GP next year](#), Slooten said the return of the cruise ships could be the straw that broke the camel’s back.



Iain McGregor/Stuff

A marine mammal expert is concerned the return of cruise ships could be the straw that broke the camel's back for Lyttelton Harbour's dolphins. (File photo)

While Lyttelton was already more of an industrial harbour and Akaroa more recreational, both were important to the Hector's dolphin population, she said.

“These harbours are important for shelter, especially for mothers with young calves.

“They are also very productive areas. Harbours are important habitat for spawning fish and juvenile fish, including species that Hector's dolphins feed on.”

Slooten said despite their “critical” importance to dolphins, many harbours were under increased pressure from commercial activities like ports, shipping traffic, and dredging.

“All of these activities degrade the habitat for dolphins and other species they depend on.”