

Growth & Growing Pains in the NZ Cruise Market

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Abstract

This paper looks at the growth in the NZ cruise market and the infrastructure, environmental and funding challenges of such rapid growth. Back in 1991, one cruise ship visited Auckland. In 2018/19, the number was 127. In Akaroa in 2018/19, cruise passengers outnumbered the 624 local residents by a ratio of 3.4 to 1 on visit days. Voyages to Fiordland, a world heritage listed area have increased nearly fivefold from 23 in 2001/2 to 111 in 2018/19.

A second research aim was to estimate the size and profile of the Australasian cruise market. As will be shown, it is not the sum of the Australian and NZ markets but rather the Australian market plus the 'net' NZ market (or vice versa).

The growth in passengers and larger cruise ships poses an infrastructure challenge which has been compounded by the effects of two strong earthquakes. Lyttelton port was severely damaged by the 2011 Canterbury earthquake. Only in 2020/21 when a new \$67 million cruise wharf and terminal is operational will Lyttelton regain its position. Further north, the 2016 Kaikoura earthquake damaged the wharves at Centre Port Wellington. For Auckland, the dedicated cruise wharves are now too short to berth the largest ships of over 320 metres and so on a few occasions, cruise ships have had to anchor and tender passengers ashore.

Funding the port infrastructure is contentious. The uplift in local economic activity from cruise ship spending is trumpeted by the Cruise Line Association but even if the spending figures are correct, the money won't pay for the infrastructure improvements directly.

Cruise tourism is one aspect of a general surge in NZ tourism. In recognition of the pressure on infrastructure and the environment, the Government introduced a \$35 tourist levy on July 1st 2019. Residents of Australia, some Pacific Islands and NZ were exempted however lowering the yield. Consequently, other sources of funding will still be required. Higher port tariffs, Environment Southland's Marine Fee and Christchurch Council's anchorage charge are reviewed.

1 Introduction

Cruise ship tourism is surging ahead in NZ leaving land-side infrastructure, environmental regulation and funding languishing in its wake.

Back in 1991, one cruise ship visited Auckland. In 2018/19, the number was 127. For Fiordland National Park, visits have increased from 40 in 2006/7 to 119 in 2018/19 making it the second most visited cruise destination in NZ. Since the Global Financial Crisis in 2008, NZ cruise passenger numbers have surged 8.2% a year. The growth has been 1.7 times faster than global ocean cruise passenger growth which averaged an otherwise impressive 4.8% a year.¹ Back in 2009, 94,000 people took a NZ cruise, representing 0.53% of the global total of 17.8 million passengers. By 2018, the NZ cruise market had more than doubled to 191,000 accounting for 0.7% of an estimated global total of 27.2 million passengers. Thus although still small (less than 1% of the global ocean cruise market) the NZ market has increased rapidly over the last decade with more cruises offered on ever larger ships. In 2018/19 for example, the Ovation of the Seas, made seven NZ cruises. This mega cruise ship carrying 4,800 passengers and 1,300 crew dwarfs the population of some of the smaller NZ townships it visits.

Growth has not been without problems. For Auckland, NZ's premier cruise port, the Ovation of the Seas and ships like her that exceed 320 metres have sometimes had to anchor in Waitemata Harbour and tender passengers ashore. Akaroa, a small township of 600 people on the Banks peninsular 85 kms from Christchurch has found its water supply and toilet facilities inadequate to cope with the thousands of cruise passengers that have arrived since the 2011 Canterbury earthquake which put the Port of Lyttelton out of action.

The paper sets sail with a definition of cruise ships and a map of New Zealand's cruise destinations. Sections 3 and 4 survey the market with a detailed analysis of cruise itineraries for 2018/19. Section 5 returns to port for an assessment of future growth. We then step onto dry land to hear assess how much tourists spend on-shore in section 6. Section 7 comments on some of the infrastructure issues facing NZ ports. Section 8 looks at port access and how Akaroa has been inundated by cruise tourism. Section 9 looks at the 'dark-side' of cruise tourism and what Environmental Southland has done to monitor, mitigate and reduce the effects of environmental degradation through its Deed of Agreement. Section 10 ventures into the aspect of infrastructure funding then finally in Section 11 we retell the salient aspects of our paper.

2 Definitions, Data & Approach

We define cruise ships as ocean going vessels with a capacity of at least 100 passengers. This definition was adopted by Douglas, Ellis and Frost (2018) in a similar analysis of the Australian market.

One distinction worth making is with ocean liners where the purpose of travel is 'utilitarian' to get from A to B. By contrast, with cruise ships where hedonistic

¹ Global figures taken from Cruise Lines International Association.

pleasure is the name of the game although the attractiveness of the destinations is important in peoples' choice of cruise.

The halycon days of the ocean liner were pre 1950 before aircraft sent most ocean liners to the scrap-yard.² For NZ, the NZ Shipping Company formed in 1873 ran many of the ocean liners serving the country until 1969.³ Today, only the Queen Mary 2 remains in world service as an 'ocean liner'.⁴

There is also the question of what classifies as a cruise port. Based on of port schedules, cruise ship itineraries and NZ Cruise Association data, a total of thirty cruise destinations (including Sub-Antarctic Islands) were visited in 2018/19. Figure 1 maps the destination and Appendix 1 lists and provides a description of the ports, anchorages and places visited.⁵

Figure 1: Cruise Ports, Anchorages and Cruise Destinations



Note: location of sub Antarctic islands not exact.

Auckland is NZ's most important port, acting as turnaround, exchange or home port where cruise passengers join or leave a cruise, where ships are resupplied and the

² The first ocean liners were built in the mid-19th century. Steam engines and steel hulls allowed for bigger and faster ships that dominated trans-continental travel until the 1950s when long-distance passenger jet aircraft took off. By 2019 less than ten of the ocean liners built before 1967 survive.

³ <http://www.simplonpc.co.uk/NZSC.html>

⁴ See the following link for a guide tour of the Queen Mary 2 (the ship did not visit NZ in 2018/19).

<https://www.usatoday.com/story/travel/cruises/2017/03/06/last-great-ocean-liners/98345830/>

⁵ The map shows Chatham Islands which were visited by cruise liners in 2015/16 but not in 2018/19.

where staffing and maintenance may be undertaken. Tauranga, Wellington, Napier, Lyttelton and Port Chalmers are also major cruise ship ports.

Some ships, especially the larger cruise ships 'dock' at 'anchorages' and ferry passengers to shore on tender vessels. Akaroa is an example.

There are also cruise destinations where ships visit but do not disembark passengers. Fiordland and White Island are examples. These destinations feature in cruise marketing but don't contribute to on-shore expenditure.

A second study aim was to estimate the size and profile of the Australasian cruise market. A variety of data sources were used to do this including the NZ Cruise Line Association; Parliamentary Commissioner for the Environment; the Ministry of Innovation and Employment; Port Authorities and Territorial Authorities and Cruise Web sites (Cruise Mapper and Crew Centre) to understand 2018/19 itineraries.

The growth in the NZ cruise market is plotted in Figure 2. Over two decades, cruise voyages increased more than fourfold from 40 in 1998-99 to 176 in 2018-19. Passenger numbers increased nearly twentyfold from 18,000 to 310,000 reflecting an increase in ship size which saw average passengers per voyage increase 3.5 fold from 470 to 1,760.⁶

At 12%, the compounded annual growth rate in cruise passengers since 1995 has been much greater than NZ holiday visitor growth (7%) as monitored by NZ Ministry of Tourism. It is also 4 times greater than GDP growth, which averaged 3% per year.

The growth rate is similar to the Australian cruise market which averaged 12.5% a year between 2003 and 2018, Douglas et al (2018).

Extrapolating past trends puts cruise ship numbers for 2028/29 at 248 and passenger numbers at 540,000 with the average ship carrying 2,200 passengers. Of course this is an extrapolation and therefore subject to a wide range of economic conditions and other factors.

3 NZ & Australia Cruise Market in 2018/19

New Zealanders like a cruise but are far less infatuated than Australians who are the world's biggest cruise lovers per head of population. According to the UN World Tourist Organisation, Australians went on 1.3 million cruises somewhere in the world averaging 54 cruises per thousand population, see Figure 3. America was second on 36 per thousand population. NZ achieved a respectable 20 cruises per thousand population in 2017 (98,000⁷ for a population of 4.9 million).

Based on these figures the global market is around 25 passenger voyages.

⁶ The estimates for 2018/19 were based on an analysis of cruise itineraries described in this paper. Also plotted on the graphs are Stats NZ predictions for 2018/19 which are a little higher (e.g. 191 v 171 for cruise journeys).

⁷ <https://www.stuff.co.nz/business/105693690/a-record-98000--kiwis-go-cruising>

Figure 2: Growth in NZ Cruise Market

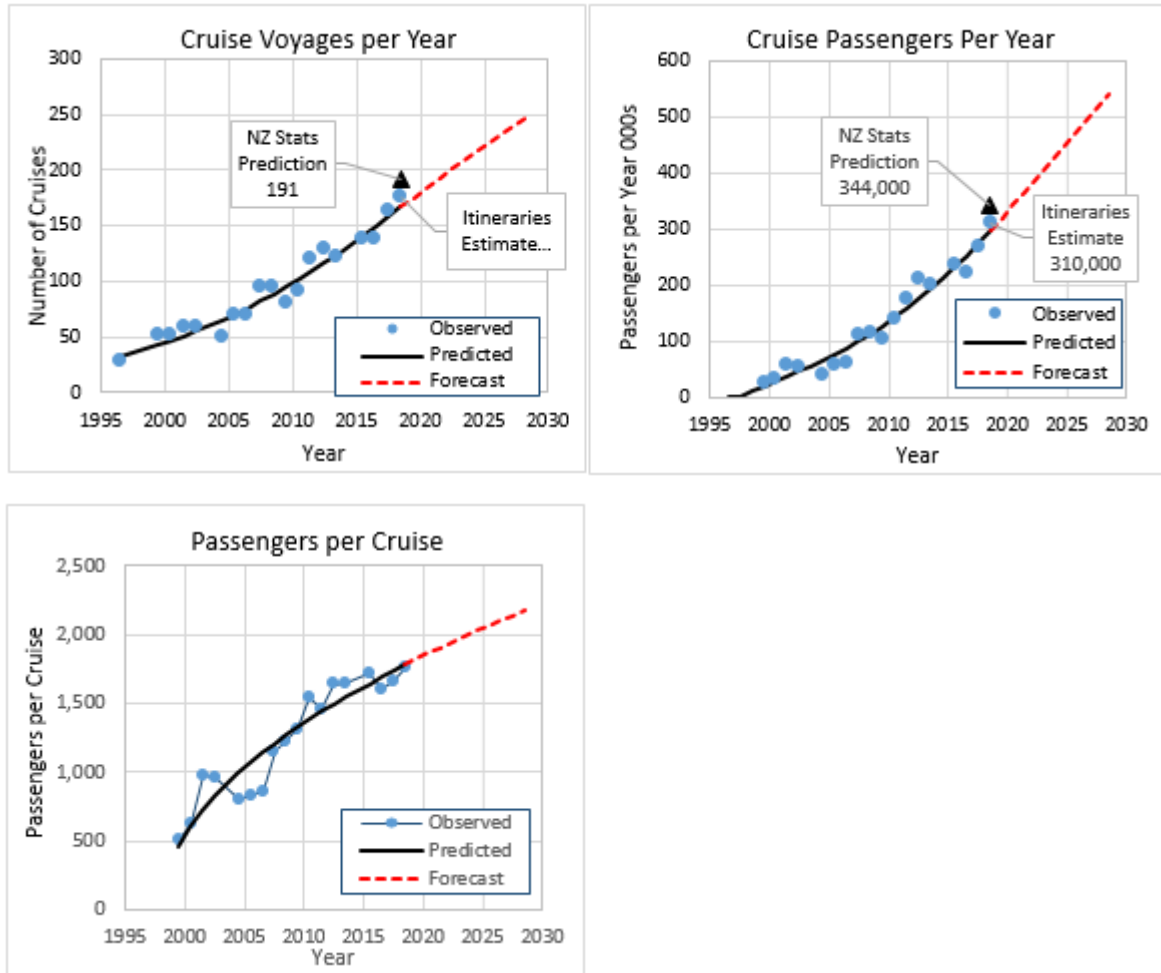
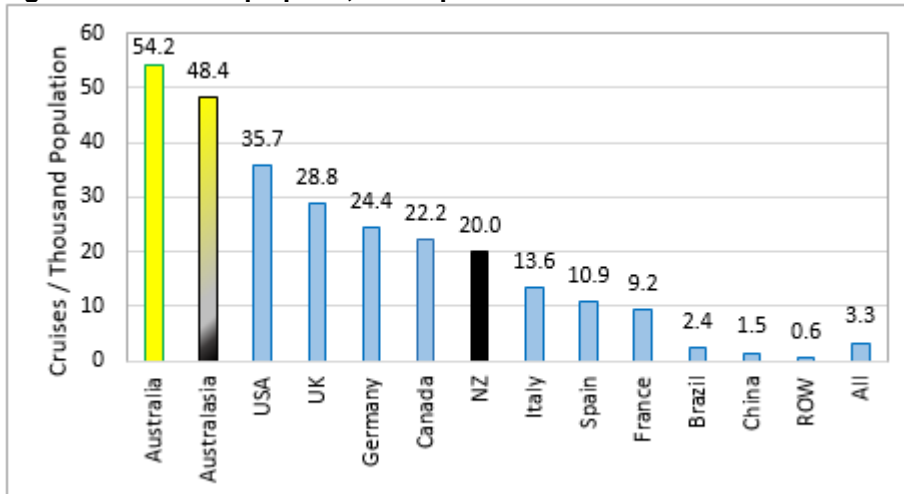


Figure 3: Cruise Trips per 1,000 Population



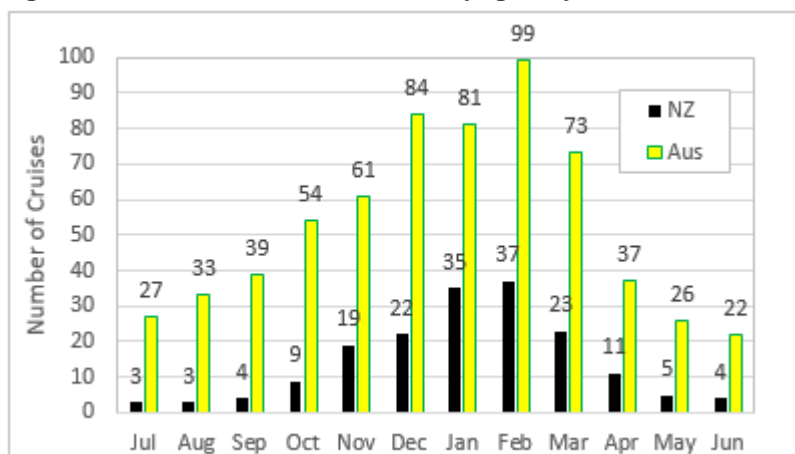
ROW rest of world; Source: Cruise numbers from UN World Tourism Organisation.

41 different cruise ships were scheduled to visit NZ between October 1st 2018 and Sept 30th 2019. This compares with 51 different ships visiting or being based in Australia.

The number of cruise voyages involving at least one NZ port/anchorage was 175. Each cruise ship therefore made approximately 4 NZ voyages. For Australia, the number of voyages was 636.

Although cruise ships visit NZ all year round, the cruise season really lasts 30 weeks from October to mid-April as can be seen from Figure 4.⁸ For 2018/19, 152 cruises (90%) were during October to April with 17 between May and September (10%). February is the busiest month for both NZ (37 voyages) and Australia (99). There remains some room for growth since Auckland, NZ's busiest port, had 17 days (60%) in February 2019 when no cruise ships berthed.

Figure 4: NZ and Australia Cruise Voyages by Month 2018-19



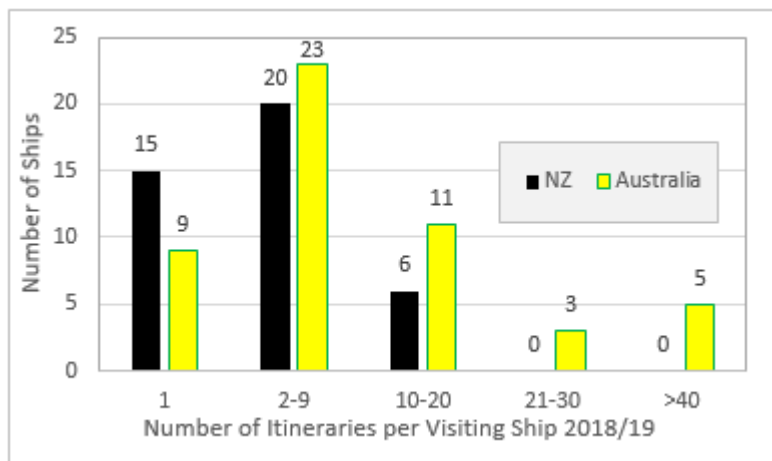
By contrast, the Australian cruise market operates all year round with a flatter profile than NZ. 29% of Australian cruises were in January and February compared to 41% for NZ.

Of the 41 ships scheduled to visit NZ in 2018/19, 15 made a single visit. The Seven Seas Mariner is an example travelling from America via Australia to Auckland then sailing down the East Coast around to Fiordland and then departing back for Australia. Twenty ships made between 2 and 9 NZ cruises with 6 making between 10 and 20 cruises.

Figure 5 compares NZ with Australia. A key difference is the five ships that operate all-year in Australia. Pacific Dawn is one example. The ship made 66 cruises mainly from Brisbane to New Caledonia and Papua New Guinea.

⁸ Based on cruise line itineraries published on the internet for 2018/19 by organisations such as Cruise Mapper,

Figure 5: Scheduled Cruise Voyages by Visiting Ship (2018/19)



Of the 53 ships visiting/based in Australasia in 2018/19, 41 ships visited NZ ports and 51 Australia ports (2 ships visiting NZ ships did not visit Australia and 12 ships visiting Australia did not visit NZ). The profile of the visiting ships is summarised in Table 1.

As most ships visited both NZ and Australia the profiles are similar. That said, ships visiting NZ did tend to be slightly larger, younger and more expensive than those visiting Australia which primarily reflected the Australian 'work-horse' cruise ships that serve the all-year-round Domestic Australian and Pacific markets.

Table 1: Profile of NZ, Australia & Australasia Cruise Ships for 2018/19

Statistic	NZ		Average (itinerary Weighted)		
	Min	Max	NZ	Australia	Australasia
Passengers	114	4,491	2,078	1,922	1,871
Crew	75	1,350	781	746	730
Speed kph	17	25	22	22	22
Cost \$US million	65	940	412	334	325
Age Years	1	46	15	20	20
Length (LOA) m	90	348	259	250	247
Gross Registered Tons	4,200	167,800	80,873	73,504	71,758
Cabins	57	2,095	950	877	853
Cruise Ships*	41		41	51	53
Itineraries*	174		174	636	673

* unweighted by itineraries

NZ capacity (weighted by itineraries) averaged just over 2,000 passengers per cruise ship. The smallest was the 114 passenger expedition ship Caledonian Sky. The largest was Ovation of the Seas with a capacity of 4,491 passengers.

Crew per ship averaged 781 which implies a ratio of 2.6 passengers per crew member.

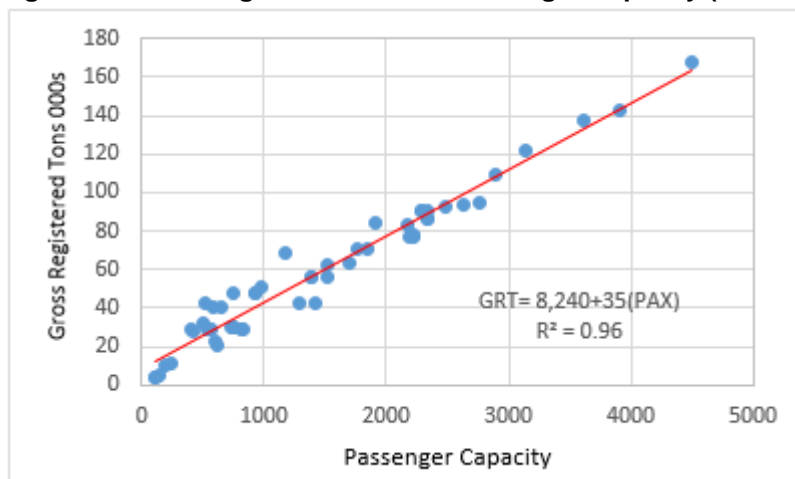
Gross Registered Tons (GRT) averaged 81,000 ranging from 4,200 tons for the Caledonian Sky to 167,800 tons for Ovation of the Seas.⁹ As can be seen from Figure 6 (combined Australasian fleet), passenger capacity was closely correlated with GRT increasing from a base (tare) ship weight of 8,240 tons at a rate of 35 tons per passenger.

The Australasian cruise fleet had an average speed of 22 knots per hour (40 kph) with ships ranging from 17 to 25 knots per hour.

The average ship cost \$US 412 million to build. Ovation of the Seas commissioned in 2016 was the most expensive at \$US 940 million. The Astor built in 1987 was the cheapest at \$US 65 million.

At 46 years old, the Albatross was the oldest ship visiting NZ and Le Laperouse was ten youngest at one year old (launched 1st Jan 2018 with 184 passenger capacity). The average age of the NZ fleet was 15 (five years younger than the 20 year old Australian and Australasian fleets).

Figure 6: Gross Registered Tons & Passenger Capacity (Australasia Fleet 53 ships)



The average ship visiting NZ was 259 metres long with ship length ranging from 90 to 348 metres. Two ships were over 320 metres (Ovation of the Seas and Majestic Princess) which meant they were too long to berth at Queens Wharf at Auckland Port.

The profile data was combined with the itinerary data to estimate the number of 'unique' passenger trips on NZ cruises. Itineraries were classified into six categories: International, Pacific Island, Australia, Domestic, Round Trip Cruises (RTC) and repositioning movements.¹⁰

⁹ Gross registered tonnage is a ship's total internal volume expressed in "register tons", each of which is equal to 100 cubic feet (2.83 m³). Gross register tonnage uses the total permanently enclosed capacity of the vessel as its basis for volume.

¹⁰ Some itineraries can be classified into more than one category for example a cruise ship stopping at a Pacific Island but then going onto Singapore. An hierarchical system was adopted that first allocated ships as International, then Pacific then Australia and then domestic NZ. Domestic cruises excluded RTCs and repositioning voyages (which were classed separately). Passenger occupancy was assumed at 86% excepting RTCs 70% & Sub-Antarctic (90%) cruises.

There was a close alignment between the NZ and Australian markets. Two thirds of NZ cruises (115 of 176) were to and from Australia.¹¹ An example is a thirteen day, \$3,000 round trip on the Majestic Princess sailing from Sydney to Fiordland then up the east coast of the South and North Islands calling at Dunedin, Akaroa, Wellington, Napier, Tauranga, Auckland and the Bay of Islands before returning to Sydney.

Table 2: NZ & Australia Cruise Markets in 2018/19

Type of Cruise	Cruise Voyages				Passengers			
	NZ	Australia	NZ-Aus	Australasia	NZ	Australia	NZ-Aus	Australasia
International	27	76	21	82	35,400	100,800	31,100	105,100
Pacific	14	188	3	199	16,500	325,700	3,300	338,900
NZ - Australia	115	115	115	115	246,400	246,400	246,400	246,400
NZ Domestic	14	-	-	14	7,700	-	-	7,700
Australia Domestic	-	194	-	194	-	260,000	-	260,000
RTCs	4	59	-	63	3,900	65,300	-	69,200
Sub Antarctic	2	-	-	2	300	-	-	300
Repositions	-	4	-	4	-	-	-	-
Total	176	636	139	673	310,200	998,200	280,800	1,027,600

27 'world' cruises carried an estimated 35,400, compared to 76 Australian cruises carrying 100,800 passengers.

14 NZ Pacific cruises (all from Auckland) carried 16,500 passengers which was a relatively when compared to Australia where 325,700 passengers were carried on 188 cruises (mainly cruises from Sydney, Brisbane and Cairns).

Two NZ cruises to the Sub-Antarctic islands by the Caledonian Sky and Le Laperouse carried an estimated 300 passengers.

Fourteen domestic NZ cruises carried 7,700 passengers compared to 194 Australian domestic cruises carrying 260,000.

Four Round Trip Cruises (RTCs) carried 3,900 passengers. The 4 cruises were all on the Pacific Aria from Auckland (with no other stops made at other NZ ports). The number of RTCs was lower than for Australia where there were 59 (mostly Sydney and Brisbane). RTCs are usually three night excursions that 'go round in a circle' without stopping at another port. It is hard to see much positive local economic impact accruing from these cruises. Indeed, the effect is likely to be negative by 'relocating' drinking and eating off-shore.

The number of unique passenger voyages totalled 310,200 for NZ. By comparison Tourism NZ projected the number of cruise passengers for 2018/19 at 344,000 (up from 270,000 in 2017/18). Tourism NZ figures are therefore 11% higher.¹²

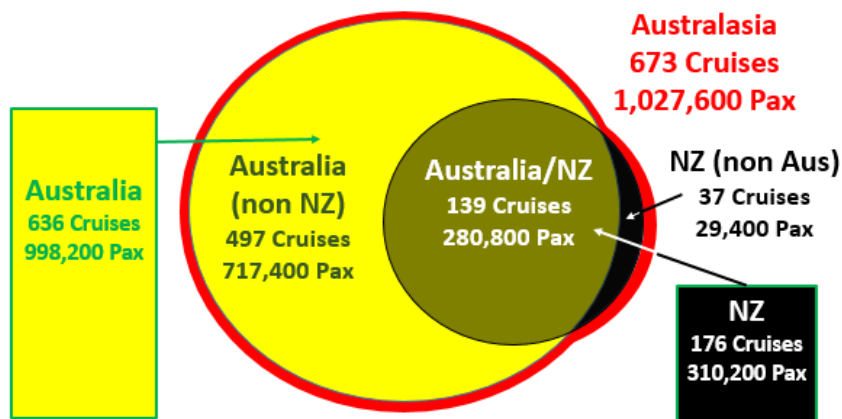
For Australia, the number of voyages was estimated at 998,200 which made Australia 3.2 times bigger than NZ.

¹¹ The Australian estimates were originally done in October 2017 and reported by Douglas et al (2018). Some updates were made to the Australian estimates in compiling the NZ figures.

¹² <https://www.tourismnewzealand.com/media/3359/cruise-sector-infographics-march-2018.pdf>

It would be wrong to add the NZ and Australia figures together to calculate the Australasian market since out of 176 NZ cruises, 139, (80%), called at an Australian port carrying 280,800 passengers. Deducting these passengers from the NZ total (310,200) leaves 29,400 passengers on NZ cruises that don't involve Australia. Adding this 'net' figure to the Australian market of 998,200, gives an Australasian market of 1.027 million passengers for 2018/19. Figure 7 presents the market sizes and shows the Australasian market to be only 3% bigger than the Australian market. The Australasian market represents 4% of the world market of 25 million passenger voyages estimated from World Tourism data.

Figure 7: Composition of the Australasian Cruise Market (2018/19)

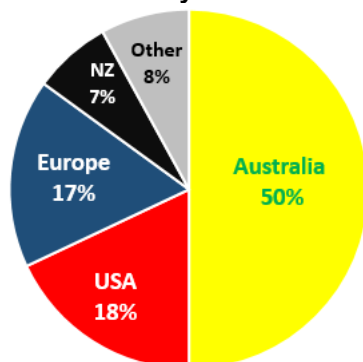


Notes: Pax: Passengers

Study estimates

Stats NZ statistics have estimated that for 2018, one half of passengers on board NZ cruise ships were Australians, Figure 3. 18% were American, 17% European, 7% NZ and 8% other. Applying the 50% share to the total of 310,000 passengers on board NZ cruises in 2017/18, estimates that 155,000 were Australians.¹³

Figure 8: Nationality of NZ Cruise Passengers (2017)



Source: Stats NZ Cruise Traveller Statistics June 2017

¹³ Given, the total number of cruises made by Australians worldwide by the World Tourism Organisation has been estimated at 1.3 million, the 155,100 on NZ cruises suggests that 1 in 8 cruises made by Australians are NZ cruises.

4 Ship Visits & Passengers Numbers by Port/Anchorage

For 2018/19, Port of Auckland was estimated to have the highest number of visiting ships at 127 (13% of the NZ total of 973). Tauranga was second with 116, Fiordland third with 111, Wellington fourth with 110 and Port Chalmers fifth with 108. Akaroa was sixth with 91 visits.

Ship visits were classified into transits and turnarounds. Transits allow passengers to get off to see the town or go on a longer bus tour before re-boarding their ship.¹⁴

A turnaround involves passengers disembarking and ending their cruise with a new set of passengers boarding the ship to start their cruise.¹⁵ 61 out of the 176 itineraries (35%) were turnarounds. All but one was at Auckland.¹⁶ Disembarking and embarking passengers may stay in hotels and/or catch flights.

The total number of NZ 'port' passenger visits was 1.44 million (4.7 times greater than the number of on board ('unique') passengers reflecting the number of different calls per cruise. The figure excludes Fiordland, White Island and Sub-Antarctic Islands where ships visit but passengers do not disembark.

At 127, Auckland had the highest number of ship visits. Passenger movements totalled 288,000 with 155,000 getting on / off (54%) and 134,000 transiting (36%). Tauranga was second with 116 ship visits and 214,000 passenger movements (all transits).

Fiordland was third in terms of visits (111) although very few passengers disembark.¹⁷ Most cruise ships visit Dusky Sound and/or Milford Fiord then turn back to sea. Occasionally, passengers disembark at Milford Town (2 in 2018/19) with passengers travelling by tour bus to Queenstown.

Wellington and Port Chalmers (excluding Dunedin) were the fourth and fifth biggest ports.

Akaroa was sixth with 91 visits and 169,000 passengers. By comparison, only 15 cruise ships, mostly smaller vessels, visited Lyttelton; a port badly damaged in 2011 by the Canterbury earthquake and which was being re-developed in 2018/19.

¹⁴ For the purposes of calculating passenger movements, transits were treated as one passenger movement and turnarounds treated as two passenger movements. The Appendix provides the estimates. It has been estimated that 94% of passengers go ashore, based on the Pacific Islands tourism impact studies that quoted research by North American estimated by BREA. The percentage going onshore is likely to reflect the onshore activities available and the ease of accessing the shore (anchorage tenders being less convenient than walking down a gangway) and the ease of getting to the city centre. It is also worth noting that passengers could make more than one visit ashore.

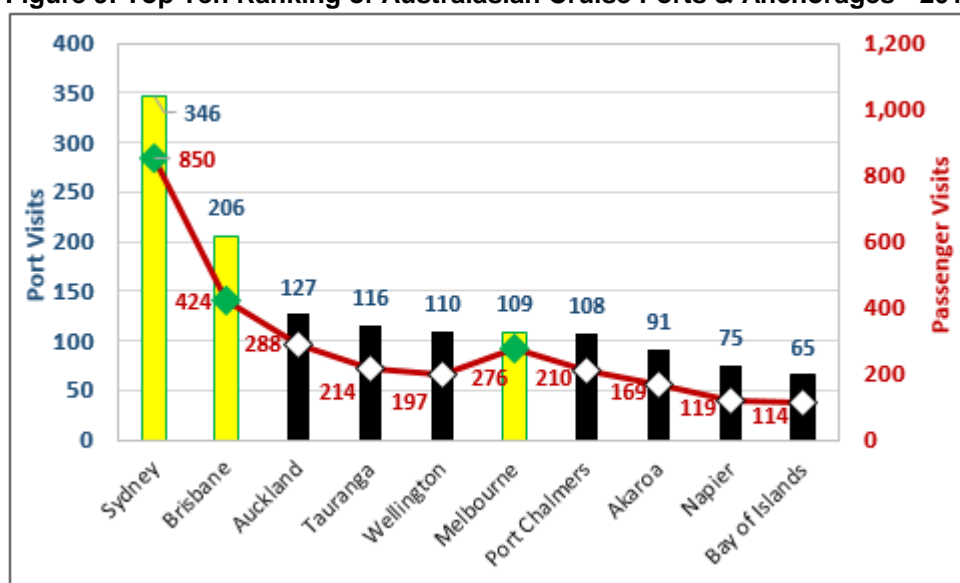
¹⁵ It was not always 100% certain from the itineraries whether visits were turnarounds or transits. A best guess was made. No passengers were assumed to join a cruise (or leave) after the first departure port.

¹⁶ The exception was Le Laperouse at Dunedin.

¹⁷ Some ships sail around Fiordland making more than one visit in succession. Where this occurred usually for expedition type cruises only one visit was recorded.

Figure 9 presents a ranking of the top ten ports/anchorages in Australasia.¹⁸ Sydney was top in 2018/19 with 346 visits and 850,000 passengers.¹⁹ Brisbane was second with 206 visits and 424,000 passengers. Both cities are home ports for Pacific, Domestic and Australia/NZ cruises. Auckland ranked third, Tauranga fourth and Wellington fifth. The four other ports were all in NZ with Akaroa and Bay of Islands particularly noteworthy given their anchorage ‘facilities’ and small populations. Melbourne was the only other Australian port in the top ten.

Figure 9: Top Ten Ranking of Australasian Cruise Ports & Anchorages - 2018/19



5 Recent Trends and Ten Year Port Projections

A ten year ‘port’ projection was developed based on the port data and national projections presented in section 3.²⁰ Essentially, the ratio of port ship visits to national cruise visits (Figure 2) was estimated using historical data then projected forwards to 2028/29 taking account such local factors such as the redevelopment Lyttelton. The resultant ratio was multiplied by the national cruise visit projection (Figure 3) to get the total number of visits for each port/anchorage.

Figure 10 plots the trends and projections. Visits to Port of Auckland grew from 1 in 1991/92 to 27 in 1996/97. Between 2008/09 and 2018/19, cruise ship visits increased from 69 to 127 visits, averaging 6.3% a year. The forecast is for visits to increase at 4.6% a year to reach 199 by 2028.

¹⁸ Fiordland has been omitted since it is not a port or an anchorage where passengers disembark.

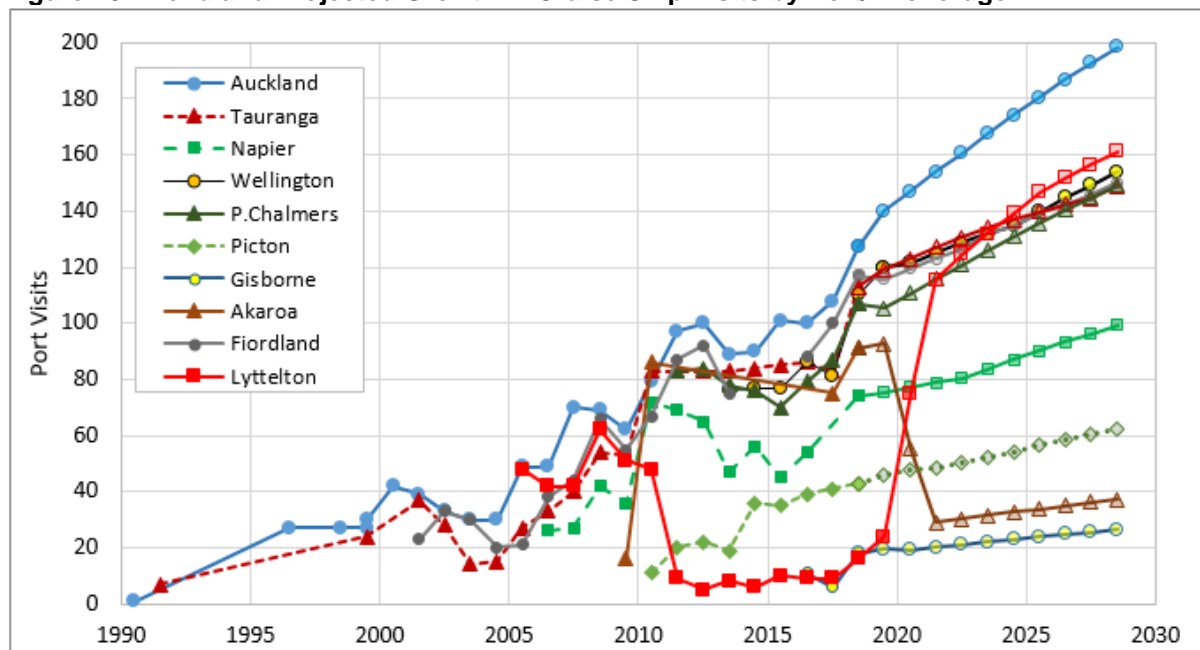
¹⁹ Growth has slowed at Sydney since 2016/17 possibly reflecting the constraints at Circular Quay and White Bay terminals.

²⁰ Historical data made publicly available varied by port. Auckland and Tauranga had the most comprehensive published data giving the number of ship visits per year dating back to the 1990s. Cruise ship numbers were in Annual Reports by Napier and Picton. Data for Wellington, Port Chalmers was patchy. The Port of Lyttelton provided data on request. Gisborne was helpful but unable to provide data other than that which could be obtained from miscellaneous reports.

Growth is likely to be reasonably evenly spread amongst the other ports with Tauranga, Wellington, and Port Chalmers continuing to have similar shares reflecting the tendency for cruise itineraries to feature all three ports.

The big change is forecast to be at Lyttelton and Akaroa. Once Lyttelton's \$67 million wharf and cruise terminal development is operational (2020/21) and cruise companies have redone their itineraries (operators plan 2-3 years ahead to allow for passenger bookings), Lyttelton is likely to regain most of the cruises that diverted to Akaroa. By June 2018, 70+ visits had already been booked by the port (included in the forecast). For Akaroa, cruise visits were forecast to return to pre Canterbury earthquake levels.

Figure 10: Trend and Projected Growth in Cruise Ship Visits by Port/Anchorage



Visits to Fiordland were forecast to increase but at a declining rate reflecting environmental constraints (e.g. the limit of no more than 2 cruise ships visiting a fiord at any one time). By 2028/29, visits were projected to rise to 150 which is a 30% increase on 2018/19.

6 Local Economic Impacts of Cruise Ship Spending

On-shore spend estimates produced by M.E Consulting for the NZ Cruise Association forecast the direct on-shore spend for 2018/19 at \$911 million. The on-shore spend included \$524 million of passenger spending, \$46 million crew and \$341 million of ship resupply spending.

According to the M.E. Consulting figures, each passenger spent \$370 at each port (where spending opportunities existed) which is clearly high.²¹ In explaining their figures, M.E. Consulting commented that the *“expenditure includes international airfares, fuel, and other imports, which have very little impact on the New Zealand economy”*. Airports of course would see ‘airfares’ as part of their economic impact and for NZ, airfares seem mostly relevant for passengers starting or finishing their cruise at Auckland, NZ’s cruise ‘exchange’ port (and many would fly on non-NZ carrier aircraft).

Figure 11: Cruise Tourists in Wellington



Australians from Ovation of the Seas queue on Lambton Quay to ride the Cable Car Wellington’s biggest tourist attraction. Most buy their tours on-board and often have little cash to spend locally. Photo Neil Douglas 14th March 2019

Harold Goodwin of the Responsible Tourism Partnership argues *“you need to be very convincing about the economic benefit. If you have a cruise liner which is drawn up in the port, the chances are the people will have had a good breakfast on the boat. They might take lunch somewhere in the city, but they probably won’t be very hungry, and they will probably have dinner back on the boat”*.²²

This is anecdotally true for NZ biggest market for cruise tourists: Australians. Australians have a reputation, for seeking the cheapest activities: a walk around town, a cup of coffee or a beer at a pub. At this level of spending, the amount would be around \$10 to \$20.

An amusing but admittedly anecdotal piece of ‘evidence’ for low spending by cruise passengers is provided by Paddy Burgin a Wellington guitar maker and busker. He usually makes \$25 an hour busking in central Wellington but he only made \$4 from an hour of busking to cruise passengers waiting to catch the Wellington Cable Car.²³

So there is scepticism of the on-shore passenger spending put out by Cruise Line Associations, Ports and councils seeking to attract infrastructure funding from central

²¹ This was calculated by dividing \$524 million by the 1.44 million cruise passengers disembarking at ports/anchorages where spending opportunities exist (i.e. excluding visits to Fiordland, Sub-Antarctic Islands).

²² <https://www.ship-technology.com/features/featurea-cruise-too-far-how-overtourism-impacts-the-worlds-top-destinations-5832202/>

²³ As relayed to the authors by Paddy Burgin.

government. Assumptions such as ships being 100% full, everybody disembarking including crew and not deducting cruise operator mark-ups on on-shore tours (typically 40-70%) and group size. Indeed for New England, Woodward reduced the estimated spend to a quarter of the original estimate.²⁴

A review of European, North American, Australian (Darwin and Tasmania) and Pacific Island studies by Douglas, Ellis and Frost, produced benchmark figures of \$160 for passenger spending at big ports (e.g. Auckland) and \$110 at smaller ports. These figures are for people who go ashore. Anchorages requiring tenders to ferry passengers ashore are likely to deter some passengers especially older and less mobile passengers. There is also likely to be less time to spend at tender ports and fewer spending choices.²⁵ For these anchorages, an average spend of \$70 is reasonable. For crew, Douglas, Ellis and Frost (op cit) estimated spending of \$65 and \$45 for crew who go ashore (25% of total crew onboard).

With these assumptions, passenger and crew spending for NZ in 2018/19 would amount to \$170 million (\$160 million by passengers and \$10 million by crew). This estimate is 28% that of M.E. Consulting. The 'factor' is therefore similar to Woodward's 25% for New England.

7 Rebuilding and Upgrading Port Infrastructure

Earthquakes effectively destroyed the Port of Lyttelton and affected operations at Centre Port Wellington. Lyttelton was severely damaged by the Canterbury earthquake in 2011. In 2015, the cost of redeveloping the port was estimated at \$900 million with the cruise wharf and terminal component costing \$40 million. Initially reluctant to rebuild (see section 10) the cruise berth & Terminal 21 between Inner Harbour's entrance and Cashin Quay is forecast to be operational in 2020 at a cost of \$67 million (Radio NZ 25/10/2018) and will be able to handle ships up to 362 metres with the existing berth available for smaller ships.

The south end of Aotea wharf at Centre Port Wellington was damaged by the 2016 earthquake. Consequently, when two cruise ships berth (cruise ships are generally given priority) bulk log freighters must anchor in the harbour. An opportunity cost of catering for cruise ships is delays on freight operations. To maintain safe working and minimise disruption to freight activities, cruise passenger movements at Wellington also need to be curtailed. Figure 12 shows the economical passenger waiting facilities for shuttle buses.

²⁴ Woodward produced the report for the Portland Press Herald/Maine Sunday Telegram. The Gabe and McConnon study <https://new.umaine.edu/soe/wp-content/uploads/sites/199/2009/09/Portland-Cruise-Final.pdf> was in context of the decision by Freeport Portland (the largest seaport in New England USA) to build a \$US 26 million Ocean Gateway passenger terminal in 2002 (which also provides a berth for the Nova Scotia ferry) without a study of the economic impact. Gabe and McConnon did a post build survey in 2009. Ben Harbor and Rockland were also considering building piers capable of allowing large cruise ships to dock rather than anchor however there was opposition against expanding visits by large cruise ships in both towns. <https://www.pressherald.com/2018/06/11/long-touted-economic-benefits-of-cruise-ships-far-overstated/>

²⁵ Where cruise ships berthed for more than one day (38 occasions), the spend figures were doubled.

Figure 12: Cruise Passenger Waiting Area at Centreport Wellington



Photo by Neil Douglas May 2019

Queens wharf (completed in 2013) is the primary cruise berth at Port of Auckland. It can moor ships up to 294 metres long. Although most ships can berth, three ships that visited NZ in 2018/19 exceed this length: Celebrity Solstice (320m), Majestic Princess (330m). Ovation of the Seas (348m). Celebrity Solstice was able to berth at Princes Wharf despite constrained terminal facilities. Ovation of the Seas and Majestic Princess needed to berth at Jellicoe Wharf or anchor in the harbour and tender passengers to Queens Wharf terminal. Tenders are not popular however by passengers or cruise operators as they slow disembarking, reduce time on-shore and make it difficult for older and infirm passengers to go ashore.

To enable longer ships to berth, a 90 metre long mooring extension is planned to be constructed off Queens Wharf (see lower part of Figure 13) at a cost of \$16.9 million (May 2019).

Port Chalmers built a dedicated cruise terminal and installed six 150 ton holding capacity bollards & two "breast line" bollards introduced 2016 to moor larger ships (replacing 70 ton bollards).

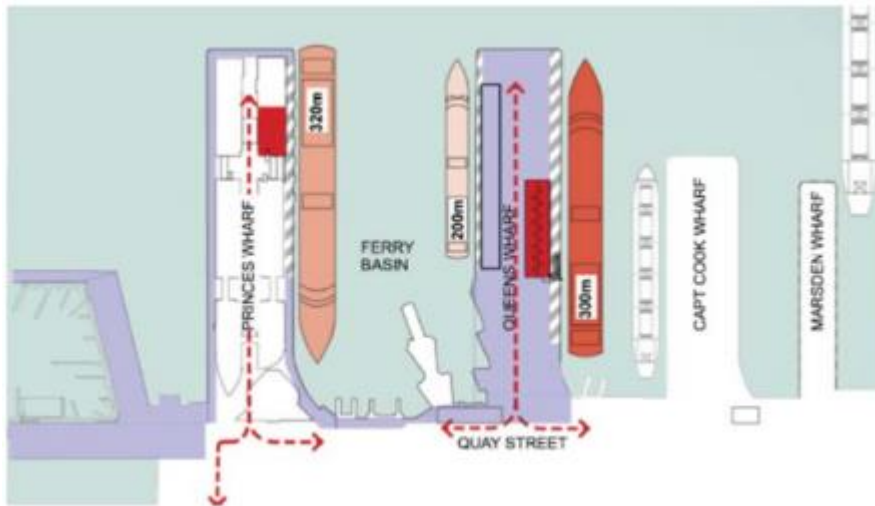
At Timaru in February 2017, the mooring lines of the cruise ship Seabourn Encore broke in high winds causing the ship to collide with a cement carrier.²⁶ In response, PrimePort Timaru installed high-capacity storm bollards costing \$0.75 million.

At Picton which is also the south island terminal of Cook Strait ferries, Port Marlborough dredged 20,000 cubic metres of seabed material close to the Shakespeare Bay wharf to increase the berthing capacity to accommodate cruise ships over 320 metres.²⁷

²⁶ <https://www.stuff.co.nz/business/112270886/timaru-cruise-ship-crash-puts-safety-at-all-ports-under-the-spotlight>

²⁷ <https://www.stuff.co.nz/business/78812406/port-marlboroughs-dredging-plans-encourage-larger-cruise-liners?rm=m>

Figure 13: Auckland Cruise Wharves (current layout 2019)



Artist's Impression of Dolphin Wharf Extension



8 Port Access & Impacts on Small Townships like Akaroa

Ideally, cruise terminals should be within easy walking distance of the city centre and permit passenger access through the port. This is not the case at 'working ports' like Wellington and Napier (see Figure 14) where passengers access is restricted for safety and customs reasons meaning shuttle buses are needed to transport passengers to and from ships.

Wellington's wharf is within a 15 minute walk of Parliament but the walk is along a busy arterial road through an industrial area. It can be unpleasant when it's raining or windy. Most passengers catch a shuttle bus to and from the CBD. When two large cruise ships arrive on the same day (see Figure 15), 110 bus trips could be needed to transport the 5,000 passengers into town.

Figure 14: Tour and shuttle buses line up at the Port of Napier



Port of Napier is working industrial port that does not allow walk access requiring shuttle as well tours buses Photo Katie Nimon.

Figure 15: Two cruise ships berthed at Wellington



Radiance of the Seas & Celebrity Solstice berth in Wellington (19/2/2019). Photo by Murray King

Passenger numbers from the arrival of two large cruise liners won't overwhelm of Wellington or Auckland.

Passenger numbers fall well far short of some overseas cities like Barcelona and Miami. In 2018/19 Auckland received around 280,000 cruise passengers. By contrast Miami receives 5.1 million, Barcelona 2.7 million and Rome 2.2 million. Numbers are also far lower than Sydney (1.2 million) and Brisbane (0.4 million) but comparable to Melbourne (275,000).²⁸

The township of Akaroa with its tiny population of 624 can be swamped when two or more cruise ships arrive. In 2018/19, there were 21 days when 2 cruise ships arrived, 2 occasions when three ships arrived and 1 occasion when 4 ships were scheduled

²⁸ Based on Cruise Line International Association, Tourism NZ and Douglas (2018) for Australia.

(5th January 2019 when 6,984 passengers were scheduled on the 4 ships which would have outnumbered Akaroa's residents by 11 to 1).

Multiple ship arrivals have particularly angered Akaroa residents. *"There's anger now. We were perfectly happy to accept that while Lyttelton was undergoing repairs for a terminal we would have to accept the diversion of ships to this village. We did say that we didn't want to have any days where you have two ships coming in."* resident Mike Norris to RNZ (2018).²⁹

There is no NZ national body that controls cruise ship numbers and coordinates itineraries. For ports, the port authority determines the number and daily schedule on a 'first booked' basis. Where ships anchor in bays and harbours, the situation is different. For Akaroa, the Regional harbourmaster assesses safety risk but is otherwise not involved in cruise ship scheduling.³⁰

The gripes of residents include smoke pollution from funnels, noisy on-board discos, seabed disturbance from giant ship propellers, traffic congestion from tour buses taking passengers on excursions, and strains on basic infrastructure like public toilets.³¹ Figure 16 shows four photos taken by members of Akaroa Civic Trust (2018) as part of an article *"Is Mass Tourism killing Akaroa"*.

Figure 16: Cruise Ships and Akaroa



Clockwise from top left. Cruise passengers arrive by tender. Tour buses queue outside school. Portaloos at entrance to wharf. Sediment stirred up from a cruise ship departure. Photos by Jan Shuttleworth & Geoff Maxwell. Akaroa Civic Trust, "Is Mass Tourism killing Akaroa" dated November 2018.

In response to the volume of cruise passengers, Christchurch Council intends to upgrade the water supply, install more toilets and redo road markings and signage. A grant from the Tourism Infrastructure Fund has been awarded to help fund the replacement of the port-a-loos with new toilet facilities.³² \$10 million was budgeted to

²⁹ Extract from Radio NZ item broadcast on Morning Report at 10.14 am on 25th Oct 2018.

³⁰ Section 10 looks at the anchorage charges levied by Christchurch Council for Akaroa.

³¹ <https://www.stuff.co.nz/business/109116102/tug-of-war-over-akaroa-cruise-ships-threatens-jobs>

³² <https://www.ccc.govt.nz/news-and-events/news-search/show/2987>

upgrade the wharf used by cruise tenders although The Civic Trust remains concerned that the upgrade would lose its historic appearance, Wilson (2017).

At 272, Akaroa had by far the highest ratio of cruise ship passengers per capita in Australasia in 2018/19 as can be seen Table 5. Port Arthur was second on 139. Per cruise visit day, Port Arthur with its smaller population of 251, had the highest ratio of 6.34 cruise passengers per resident. This ratio occurred on 22 days whereas Akaroa had 80 days when cruise ships visited (outnumbering the population 3.4 to 1).³³

Whilst Lyttleton Port has been rebuilt, all the larger cruise ships have diverted to Akaroa. Once Lyttleton is operational in 2020, cruise visits and passenger numbers will pick up sharply. By 2021/22 186,433 passengers could disembark so it's worth point out that Lyttleton's population is only 3,000. Thus on cruise ship days, the ratio of cruise passengers to population could reach Akaroa levels (3.6 per capita in 2021/22). However most passengers will board bus tours to Christchurch, Akaroa (which the Civic Trust of Akaroa encourages) and elsewhere thus spreading the 'load'.

Table 5: Cruise Passengers relative to Town Size

Port	Pass- engers	Visits	Pop- ulation	Pax/ Pop	Visit Days	Pax/ V.Day	Pax/V.Day per capita
Akaroa	169,474	91	624	272	80	2,118	3.40
Lyttleton 2018/19	7,264	15	3,040	2.4	16	454	0.15
Lyttleton 2021/22+	186,433	115	3,040	61.3	17	10,967	3.60
Port Chalmers#	211,765	117	130,700	1.6	93	2,277	0.02
Oban (Stewart Island)	5,871	17	400	14.7	17	345	0.86
Gisborne	26,702	19	37,200	0.7	19	1,405	0.04
Picton	76,708	45	4,350	17.6	42	1,826	0.42
Eden NSW	15,000	15	3,151	4.8	15	1,000	0.32
Port Arthur TAS	35,000	22	251	139	22	1,591	6.34
Exmouth WA	6,000	7	2,200	2.7	23	261	0.12

Notes: + forecast; # Port Chalmers and Dunedin. V.Day = on day's cruise ship visit.

9 Environmental Impacts of Cruise Ships

What the economic impact studies omit despite the considerable research undertaken is the environmental impact of cruise tourism. Unlike passenger and crew expenditure, environmental impacts are likely to be negative.

The Parliamentary Commissioner for the Environment recommended in 2003 that regional councils assessed the environmental risks from cruise ships and strengthened systems to address them.³⁴

³³ Some will board tour buses for Christchurch and other destinations and therefore spend little time in Akaroa.

³⁴ https://www.pce.parliament.nz/media/pdfs/just_cruising.pdf

Waste discharge; air pollution; bio-security risks; accidents (like the Mikhail Lermontov³⁵, L'Austral³⁶, Azamara Quest³⁷); anchor damage; wildlife³⁸ and water turbidity have all been identified as adverse environmental impacts.

In 2013, the Charleston International Symposium reported that an average cruise ship generates *“30,000 gallons of sewage (or black water); 255,000 gallons of non-sewage wastewater from showers, sinks, laundries, baths, and galleys (or gray water)... tens of thousands of gallons of ballast water, bearing pathogens, and invasive species from foreign ports... and air pollution from diesel engines at a level equivalent to thousands of automobiles”* per day.³⁹

On the open seas i.e. 12 nautical miles (22.2 kms) from shore, the management of cruise liner waste is governed by MARPOL and other maritime laws.⁴⁰ The release of plastic is forbidden and other waste disposal must be recorded. There are breaches however. Carnival Corporation was fined \$US 20 million in June 2019 for dumping plastic in the Bahamas, not accurately recording waste disposals, creating false waste records and sending crews to fix violations before they could be inspected.⁴¹ The US\$20 million fine amounted to 0.1% of the value of Carnival Corporation (\$US 18.88 billion).

Sewage treated to a high standard can be released 3 miles nautical miles (5.55kms) from shore. Sewage treated to a lesser standard can be released beyond 12 nautical miles. Other types of waste can be released. P&O for example pulps some food waste and pumps it out beyond 12 miles from shore. Rubbish is disposed of when ships dock at ports with garbage processing facilities. Some waste is recycled and converted into energy using on-board incinerators.

There are two OECD nations that had not signed Annex VI of the MARPOL convention on air pollution from ships (as at August 2019) Mexico and New Zealand.⁴² Countries that have signed have been given a deadline of 2020 to reduce air pollution from burning *‘bottom of the barrel’* bunker heavy sulphur fuel. Rather than switch from 3.5% to 0.5% sulphur fuel, cruise lines are installing exhaust scrubbing systems.⁴³ Scrubbing uses seawater to wash the dirty fuel before sending the wash water back into the ocean (or to land disposal sites). Singapore, Hong Kong and China have banned the practice to protect their marine environments as have some Caribbean islands.

³⁵ The Russian cruise ship that hit a reef and sank off Picton in 1986.

³⁶ L'Austral was entering Milford Sound on February 9, 2017 when it struck a bank, damaging its hull.

³⁷ In January 2016, the Picton-bound, Azamara Quest struck Wheki Rock after entering Tory Channel with a Port Marlborough pilot on board. The accident was due to confusion between bridge and pilot.

³⁸ 70 sea birds died crash landing on to the Pacific Jewel after being lured by lights at night. The Department of Conservation has asked cruise ships to dim their lights at night. <https://www.stuff.co.nz/business/110146483/bird-deaths-lead-cruise-industry-to-dim-dazzling-lights-at-night>

³⁹ *“Harboring Tourism – Cruise Ships in Historic Port Communities”* Report of an International Symposium held in Charleston, South Carolina, USA February 6–8, 2013. <https://www.wmf.org/publication/harboring-tourism-cruise-ships-historic-port-communities>. This report quotes estimates from Ocean Conservancy dated 2002.

⁴⁰ The International Convention for the Prevention of Pollution from Ships dating back to 1973.

⁴¹ <https://www.forbes.com/sites/trevornace/2019/06/11/carnival-cruise-to-pay-20-million-after-admitting-to-dumping-plastic-waste-in-the-bahamas/#1846b41f3a6f>

⁴² <https://safety4sea.com/new-zealand-to-adapt-to-marpol-annex-vi-in-reducing-shipping-emissions/>

⁴³ <https://www.theguardian.com/environment/2019/feb/01/boom-in-cruise-holidays-intensifies-concern-over-emissions-dodging>

Stricter emission directives are already in place in Europe and the US. The EU Sulphur Directive requires ships to use 0.1% sulphur fuel whilst berthed. In Sydney, health concerns for residents living near the White Bay Cruise Terminal led the NSW Government to mandate cruise ships to use 0.1% sulphur fuel from 1 hour after arrival to 1 hour before departure.⁴⁴

In late-December 2017, the Port of Auckland announced it would install shore power infrastructure at a cost of \$18.3 million. Shore-to-ship power supply allows cruise vessels to shut down their diesel engines and for Auckland greenhouse gas emissions, nitrogen oxide and sulphur dioxide are forecast to reduce by a third.

Fiordland is promoted and marketed internationally as a ‘must-see’ component of NZ cruises by cruise operators and Tourism NZ. Fiordland and the Sub-Antarctic Islands offer spectacular natural scenery. Cruise visits to Fiordland have tripled from 40 in 2006/7 to 111 in 2018/19 making Fiordland the second most visited NZ destination.⁴⁵ Most visits to Fiordland are part of Australian cruises but there are some smaller exploration vessels such as the Caledonian Sky (114 passengers) and Le Laperouse (184 passengers) that include Fiordland as part of longer cruises to the Sub Antarctic Islands.

Unlike Wineglass Bay in Tasmania, there has been no noteworthy public petition to stop cruise ships entering the national park.⁴⁶

Figure 17: Cruise ship visiting Dusky Sound Fiordland



photo courtesy of Linda Garrison

⁴⁴ <https://www.amsa.gov.au/marine-environment>

⁴⁵ Ships that tour the Fiords over multiple days are counted as one visit. This is different to the NZ Cruise Line Association which counts successive days as 2 or more visits. For 2018/19, the NZCLA figure was 117.

⁴⁶ The incident which sparked the petition was the Diamond Princess rotating in Wineglass Bay on 15th December 2017. In doing so, the cruise ship created a plume of disturbed sediment. By 28th September 2018, the petition had garnered 13,591 signatures.

The area is with the local government area of Environment Southland (ES). Cruise ships within the internal waters of Fiordland and Stewart Island are not allowed to load/unload passengers except at Milford Sound, Paterson Inlet and Halfmoon Bay.⁴⁷

Until 2001, the Council's expenditure was funded by ratepayers.⁴⁸ The Council sought to reduce the ratepayer burden through 'user pays' revenue. Cruise ships were of particular relevance by being the 'greatest environmental risk to the fiords and to the way the Council managed the area'.

In 2001, Environmental Southland, introduced a 'Deed of Agreement' for cruise ships. The Deed of Agreement is a quasi-resource consent and places environmental obligations on cruise operators using the Fiords. In 2003, the PCE held up Environmental Southland as a good example for other regional councils to follow.

10 Funding

As the ports are not the beneficiary of the on-shore spending of passengers, the question remains as to who should pay for the wharf and cruise terminal upgrades? The answer should lie in the commercial tariffs set by ports and Councils.

For the Port of Lyttelton, rebuilding the earthquake wrecked cruise terminal and wharf was not a first order priority. Indeed, when the cost was estimated at \$40 million, the Port stated "*that is not economic for it to spend this amount on the facility*".⁴⁹ The costs subsequently increased to \$67 million (including contingency).

Table 6 sets out the tariffs for an 'average' cruise liner staying for no more than a day in port based on port websites.⁵⁰ The tariff covers marine services and berthing but excludes provisions (e.g. water supply, waste disposal, electrical power supply and bunker fuel). Also excluded are immigration and customs fees.

Table 6: Cruise Ship Port Tariffs (2019)

Port	Marine Services Charge \$	Berth Fee \$	Total \$	Cost per Pax \$	Notes
Auckland	110,800	8,900	119,700	58	MSC: \$1.37/GRT; Berthing \$0.11/GRT
Tauranga	86,300	2,900	89,200	43	MSC: > 20,000 GRT \$4,645+ \$1.01/GRT; Daily Service \$11.13/LOA metre
Wellington	69,700	-	69,700	34	MSC: Stepped function \$39,260+\$0.746(GRT-40,000); Berthing: 1st day free
Lyttelton	31,400	13,700	31,400	15	MSC: \$20,754+\$0.09(GRT-40,000); \$1,000 (Lines) + \$0.17*(GRT)

Notes: Av. ship of 80,870 GRT, 259 metres LOA, 2078 passengers; MSC Marine Services Charge see Table 1. Sources: Published 2019 tariffs on port websites plus information provided on request.

⁴⁷ The specific areas are defined in Environmental Southland Coastal Plan Section 13.1.

https://www.es.govt.nz/Document%20Library/Plans,%20policies%20and%20strategies/Regional%20plans/Coastal%20Plan/coastal_plan_december_2013.pdf

⁴⁸ Projects included coastal policy, coastal science, aquaculture management, harbour management, and coastal compliance.

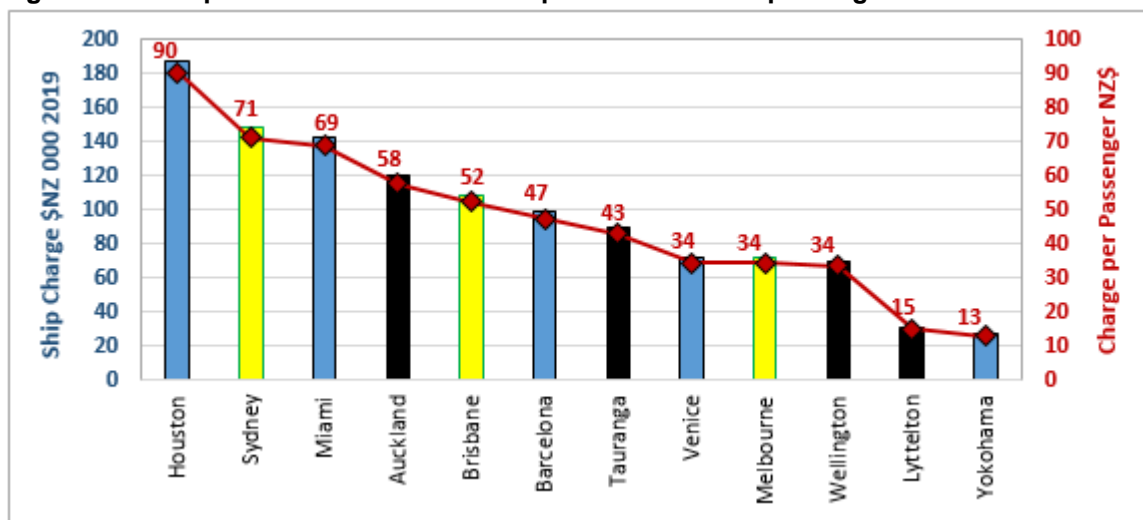
⁴⁹ Page 34 <https://ceraarchive.dpmc.govt.nz/sites/default/files/Documents/lyttelton-port-recovery-plan-preliminary-draft.pdf>

⁵⁰ There is the possibility of discounts on the advertised tariffs that may be offered to cruise ships.

Auckland had the highest tariff of \$119,700 equating to \$58 per passenger and Lyttelton the lowest at \$31,400 (\$15 per passenger). The lower tariff for Lyttelton reflects the Port's inability to take large cruise ships and ongoing construction work. Once Lyttelton is fully redeveloped a tariff of \$80,000 could produce an investment return of 5.4% over a 20 year period (with the forecasts in Figure 10).

IPART NSW (2016) undertook a review of port charges in assessing the maximum tariffs for Sydney cruise ship berths and moorings. The charges relating to 'total site occupation' including pilotage and navigation charges.⁵¹

Figure 18: Comparison of 'Total Site Occupation' Cruise Ship Charges



Sources: IPART figures for Australia and international ports adjusted for ship size, year of estimation and exchange rate. NZ figures from port web sites

At \$90 per passenger (\$188,000 per ship) Houston had the highest charge. Sydney was second at \$70 per passenger with Miami third. Auckland was fourth on \$58. Tauranga was between Barcelona (\$47) and Venice (\$34) with Wellington the same as Melbourne (\$34). Lyttelton had the second lowest charge of \$15 with Yokohama lower on \$13.

Cruise ships that anchor in harbours and tender passengers ashore may be charged anchorage fees by local councils.

In 2017/18, Christchurch city council received \$715,000 in fees from cruise ships anchoring in Akaroa Harbour. Ships were charged between \$300 and \$23,000 per visit with a passenger charge of around \$6. By comparison, Lyttelton charges \$15 and Auckland \$58. With 91 ships calling in 2018/19, the anchorage fee would have raised \$1.2 million meaning the \$10 million wharf upgrade would take 8.5 years to pay off. Akaroa residents have asked for an additional \$5 per passenger charge to help pay for infrastructure upgrades to their town-ship.

⁵¹ IPART calculated port charges for two example ships. The closest to the 'average' NZ ship in Table 6 was 1,905 passengers. The calculated charge was increased proportionally so it matched the slightly larger NZ ship, updated to 2019 (+15% from 2015) and converted to NZ dollars (A\$1: NZ\$1.05). The IPART figures exclude passenger handling at terminals and the Passenger Movement Charge levied by the Australian federal government on departing passengers (see later).

The NSW IPART study also looked at cruise ship mooring fees at Athol Buoy and Point Piper Buoy in Sydney Harbour. These buoys are used infrequently for temporary berthing when the dedicated terminals are occupied. A charge of \$36.52 per hour excluding GST is levied plus a navigation light handling fixed fee of \$593.93 (2016). For an eight hour stay, the total cost would be around \$900 (excluding GST) which amounts to 44 cents per passenger (2,000 passenger ship).

In 2001, Environmental Southland incorporated a marine fee as part of a 'Deed of Agreement' with cruise ship operators entering Fiordland. The fee is calculated according to Gross Registered Tonnage (GRT) and was set at 35 cents per GRT in 2009/10 and has been increased since then in line with inflation.⁵²

Table 6: Fiordland Marine Fee for Cruise Ships

Year	Revenue \$000	Cruise Visits	Revenue/ Visit	GRT 000s	Revenue \$ per GRT	Cruise Passengers	Fee per Pax \$^
2001/02	260	23	11,304	1,000	0.26	21,114	12.31
2011/12	1,670	87	19,195	5,500	0.30	158,989	10.50
2012/13	1,900	92	20,652	6,500	0.29	174,298	10.90
2016/17	1,855	88	21,080	6,217	0.30	188,494	9.84
2017/18	2,071	100	20,710	7,065	0.29	219,949	9.42
2018/19	3,676	111	33,120	9,191	0.40	239,159	15.37

^ fee excludes GST where applicable. Figures obtained from annual reports or estimated by authors.

For 2018/19, the revenue should have been around \$3.7 million based on 111 voyages of 83,000 GRT ships. Per passenger, the fee works out at \$15.37.⁵³

Cruise tourism is one contributor, admittedly a big contributor, to a general surge in tourism to NZ. In recognition of the resulting pressures on infrastructure and also on the environment, the NZ Government introduced a \$35 International Visitor Conservation and Tourism Levy (IVCTL) from 1st July 2019.

The IVCTL was introduced to *"enable our international visitors to contribute directly to the infrastructure they use and help protect the natural environment they enjoy."*

Australians, sixteen Pacific Island nations and domestic tourists will be exempted. For 2018/19, based on Stats NZ survey estimates, these passengers made up 57% of passengers on NZ cruises (see Figure 8). Given a total of 310,200 cruise passengers (see Figure 7), the \$35 levy would have raised \$4.6 million in 2018/19 (full year).

The actual amount will depend on whether the tax applies to transit passengers and cruises departing NZ and also how revenue is allocated to passengers flying into Auckland to embark on an NZ cruise. The tax may dissuade a few people from going

⁵² ES considers the fee to be a financial contribution (RCP Policy 13.5, S. 17) that would normally be levied in similar resource consent circumstances (Section 108, Resource Management Act 1991). The fee as per the Deed had a ten year 'life' with a 2 year transition period. At the time of writing in June 2019, the deed was under negotiation.

⁵³ In 2017/18, the fee generated \$2 million (\$20,710 per cruise visit) at \$10 per passenger according to the Environmental Southland Annual Report. This suggests a third of Fiordland cruise ship visits may not pay the fee.

on a cruise but the number is likely to be very small given the tax's small share of the cruise ticket price (1% for a 13 day \$3,000 Sydney-Fiordland round trip cruise).⁵⁴

There are few published studies on how cruise passengers respond to price changes. An analysis by Sapere (2015) for a \$22 tax on people entering and leaving New Zealand (to recover some border costs incurred by MPI and Customs) forecast visitor numbers would decline by 0.5% to 2.4%. More than three-quarters of the decline was in Australian visitors.

Of relevance is the advice of Ministry of Primary Industries and Customs who advised that cruise passengers who arrive and depart New Zealand on the same ship ('transit' passengers) would incur the same border charge as the relevant costs were considered '*applicable to these types of visitors*'. Sapere estimated that Australian transiting cruise passenger numbers would decline by 0.5% from a \$22 tax (based on an assumed price elasticity of -0.31). However for the IVTCL, the reduction would be zero since Australians are exempt. For US passengers, Sapere predicted a 0.5% reduction (based on an elasticity of -0.78) whereas for UK passengers, the predicted reduction was zero.

Australia imposes a Passenger Movement Charge (PMC) of \$A60 on all passengers leaving Australia by air or sea (over 12 years old).⁵⁵ Thus Australians and New Zealanders cruising to NZ would pay the Australian PMC on departure from Australia but not the IVTCL on arrival in NZ. By contrast, UK and American tourists could be required to pay both taxes.

Alaska has introduced a specific tax on cruise passengers. In NZ dollars it amounts to \$50 per passenger. If levied in NZ, it could have raised about \$15 million in 2018/19. Cruise ships make 4 to 5 port calls per NZ voyage so an 'Alaskan' tax would have amounted to \$11 per passenger per port visit. However, with the introduction of the IVCTL, it is most unlikely that an Alaskan style tax would now be contemplated.

11 Salient Points

The NZ cruise market has grown remarkably over the last decade. Unsurprisingly, the rapid growth has not been without some growing pains.

Since the Global Financial Crisis of 2008, passenger growth averaged 8.2% p.a. with much of the growth attributable to Australians who are the world's most ardent cruise lovers and who make up half the passengers on-board NZ cruise ships.

⁵⁴ If the price elasticity of demand was unity, the revenue loss to the cruise operators would exactly match the tax revenue. If passengers were less price sensitive, the cruise operator would lose less than the tax and vice versa if passengers were more price sensitive.

⁵⁵ Cruise operator Carnival Australia provided a cost breakdown of port costs in its submission to the IPART review. At \$60, the PMC was the largest item accounting for 43% of the total passenger cost \$138 with marine plus berthing fees totalling \$60.

An analysis of 175 cruise itineraries estimated 310,200 unique passenger voyages were made in 2018/19. Similar analysis of 636 itineraries for Australia estimated 998,200 passenger voyages which is over 3 times greater than NZ.

The Australasian market was estimated at 1.03 million voyages. It was therefore only 3% bigger than the Australian market. This was because 80% of NZ cruises involve Australia and those voyages that didn't were mostly on smaller expedition type ships. The Australasian market was 4% of the global ocean cruise market of 25 million voyages.

Cruise ships have increased in size as well as number which has necessitated port investment such as a longer cruise wharf at Auckland, stronger wharf bollards at Timaru and Port Chalmers and dredging at Picton.

Two recent earthquakes have disrupted the industry. The port of Lyttelton was destroyed by the 2011 Canterbury earthquake. Redevelopment includes a \$67 million cruise wharf and terminal. Whilst Lyttelton has been 'out of action', cruise ships have diverted to Akaroa. On cruise visit days, passengers outnumbered the township's small population of 624 by three to one and when more than one cruise ship calls (25 times in 2018/19) the town has been overwhelmed. Relief will only arrive in 2021 when the port of Lyttelton is operational again.

CentrePort Wellington was also damaged by a 2016 earthquake. Passenger facilities are rudimentary and require upgrading and when two ships visit, other vessels have to wait.

Figure 19: Celebrity Solstice docks at CentrePort Wellington



Photo by Murray King Feb 8th 2019

To encourage public spending on infrastructure, the cruise industry trumpets the economic benefits of on-shore spending but such spending does not flow to ports.

In 2019, port charges ranged from \$15 per passenger at Lyttelton to \$58 at Auckland. The tariffs are low when compared against a typical cruise price of \$2,500 (2% for Auckland). Internationally, Auckland's port charges were lower than Sydney but higher than Brisbane. For Lyttelton there is ample scope to increase the charge to repay the cost of the new cruise terminal.

Cruise tourism is one component of a burgeoning NZ tourism market. To help fund infrastructure and mitigate environmental impacts, the NZ Government introduced a \$35 International Visitor Conservation and Tourism Levy (IVCTL) on 1st July 2019. Had the IVCTL been in place in 2018/19 it could have raised \$4.6 million (taking account Australians, New Zealanders and Pacific Islanders will be exempt). The revenue is unlikely to be large therefore and there is also no guaranteed that it would be spent on cruise tourism infrastructure.

Back in 2003, the Parliamentary Commissioner of the Environment (PCE) highlighted the adverse environmental impacts from cruise tourism. Fiordland was identified as a particularly sensitive area with 23 visits. Since then cruise ship visits have increased to 111 in 2018/19.

Sensibly, Environment Southland negotiated a 'Deed of Agreement' with cruise ship operators that limited the number of cruise ships allowed to visit at any one time. In 2019, the 'Deed of Agreement' reached the end of its ten year life. At the time of writing it was under renegotiation. Hopefully it will be renewed. It should also be considered as a template for other regional authorities such as Nelson-Marlborough faced with increasing cruise ship visits.

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APPENDIX

Table A1: Ports & Anchorages & Visit Places

#	Port / Anchorage/ Visit	Type	Visits 2018/19	Comment
1	Akaroa	Tender	91	Small Township on Banks Peninsular (600 people) acting as the cruise port for Christchurch 85kms away since 2011 earthquake. Passengers tendered ashore to wharf. To cope with tourist numbers, town's water supply was upgraded with more public toilets installed. \$5/person levy has been proposed by Akaroa Heritage Trust to fund infrastructure.
2	Auckland	Berth	127	Largest port in NZ. Cruise 'turnaround' or 'exchange' port where passengers start/finish tours. Port resupplies ships and is NZ' only 'home' port for cruise ships (maintenance). Port has 2 harbours and 1 container port. Cruise ships use Shed 10 on Queens wharf which has a Terminal that provides an event/function venue when no ships in port. Upper level of Shed 10 provides check in, customs and x-ray screening area. Secondary wharf is Princes wharf which also provides conference facilities. Princes and Queens wharves have air bridges. Port has passenger terminals for immigration. Terminal 5 mins walk to city centre. Taxis available. 40 min taxi to Airport. Ships over 320 metres have needed to anchor and tender passengers to shore. Planned construction (operational 2020) of 48m and 82m mooring dolphins off Queens Wharf with gangway to cater for ships over 320 metres. Electrical ship to shore power infrastructure also under development and operational 2020.
3	Bay of Islands	Tender	65	Ships anchor in bay near Russell. Most ships tender passengers to Paihia where there is a ferry to Russell. Free shuttle buses from Western Bay Paihia to Waitangi a tourist destination (signing of Treaty).
4	Bluff	Berth	5	Dock at South Port an Industrialized area 1.5 kms from Bluff township. The port is 27kms from Invercargill.
5	Chatham Islands	Tender	-	Archipelago of 11 islands 800 km E of NZ. Few cruise ships visit however (none in 2018/19). Smaller expedition ships call on sub Antarctic cruises (see below) e.g. Silver Discoverer in 2015
6	Dunedin/ Port Chalmers	Berth	117	Larger ships dock at Port Chalmers (107 visits) 19kms N.E. of town centre. Shuttle buses (not free). Smaller ships dock at Dunedin wharf (9 visits) 1km from city centre (Octagon). Permanent passenger terminal built in 2016 with Info Centre, lounge area / free Wi-Fi, restrooms. Six 150 ton holding capacity bollards & 2 "breast line" bollards introduced 2016 to moor larger ships (replaced 70t bollards)
7	Fiordland - Dusky Sound	Visit	111	Cruise ships visit Dusky Sound a fiord 40kms long by 8kms wide. Ships visit Acheron Passage/Breaksea Passage. No disembarkation of passengers.
8	Fiordland - Milford Sound	Tender		Most cruise ships visit the 8km Milford Fiord for scenery then turn back to sea. Some ships tender passengers or dock at Milford Town (2 visits). Approach is sometimes rough, mountain tops often hidden in mist and rainfall is intense. Overland tour available to Queenstown (5 hours) otherwise passengers do not disembark.
9	Gisborne	Tender	19	Ships over 180m tender passengers ashore. (Only Caledonian Sky at 90m which made 1 visit was < 180m). In 2017/18 season 4 of 10 visits were cancelled due to rough seas stopping ships tendering passengers ashore. Shuttle bus provided to information centre.
10	Golden Bay	Visit	1	Shallow bay at northern tip of South Island. Visited by Caledonian Sky (114 pax) expedition ship in 2018/19
11	Kaikoura	Tender	9	Tender 1.5 to 2kms to jetty landings. Walkable to township (≈2,000) or 5 mins by shuttle bus. Popular tourist destination for whale watching. Major earthquake in 2016 damaged infrastructure and road/rail connections.
12	Kaiteriteri	Visit	1	Small coastal township near Nelson. Visited by smaller (400 pax) luxury cruise ship Europa in 2018/19.

13	Lyttelton	Berth	15	Port damaged in 2011 Canterbury earthquake. Working port so passengers not allowed to walk to/from ship. Shuttle buses provided. 30 minutes to Christchurch town centre. \$67 million (Radio NZ 25/10/2018) cruise berth & terminal due 2020/21 between Inner Harbour's entrance and Cashin Quay able to handle largest cruise liners (e.g. RCI's Oasis class LOA 362 metres. Existing berth continue for smaller ships.
14	Napier	Berth	75	Working port, bus shuttles to town (1.5kms)
15	Nelson	Berth	8	Port is 10 minute walk to city centre
16	New Plymouth	Berth	2	Port Taranaki - the only deep water port on west coast of NZ.
17	Oban Stewart Island	Tender	17	Anchor in Patterson Inlet and tender passengers ashore to Golden Bay where passengers can walk to very small township under 1km away.
18	Picton	Berth	45	Dock at Waitohi wharf (next to Cook Strait ferry terminal). Short 0.5 km walk to town. Complimentary shuttle bus provided.
19	Riverton	Tender	1	Fishing boat harbour 30kms west of Invercargill. First visit in 2018/19 by Caledonian Sky. Zodiac boats and the Riverton coastguard ferried 108 US and Canadian to shore who then cycled to Bluff.
20	Ships Cove	Visit	5	Small bay in Queen Charlotte Sounds. Visited by Caledonian Sky (114 Pax) in 2018/19
21	Tairua	Visit	1	Small township (1,000) on Coromandel. Visited by Caledonian Sky (114 Pax) in 2018/19.
22	Tauranga	Berth	115	Major container port with full range of facilities. Cruise ships resupplying may stay 2 days (18 in 2018/19) or 3 days (3). Cruise ships dock in cargo area. Short walk to Mt Maunganui. 'Welcoming' shelter located outside port gates with tour operators. Shuttle buses (not complimentary) and taxis provide transport to Tauranga city centre (7kms). Bus tours to Maori attractions in Rotorua 80kms popular.
23	Timaru	Berth	3	Ships berth within a 0.5km walk of the town. Shuttle bus also available. Feb 2017, Seabourn Encore mooring lines broke and the ship collided with a cement carrier. In response, PrimePort Timaru has installed high-capacity storm bollards.
24	Tolaga Bay	Tender	1	A long wooden 660m wooden pier. Visited by Caledonian Sky, a smaller expedition cruise liner (114 pax) in 2019/19.
25	Waiheke Island	Tender	1	Normally visited by 40 minute ferry from Auckland. Rarely visited by cruise liners. In 2018/19 visited by Seabourn Encore.
26	Wellington	Berth	110	Working port, Ships dock along Aotea Quay which can accommodate 2 ships at a time. Shuttle bus provided to city centre.
27	Whakatane	Tender	1	Harbour limited by depth of Whakatane river entrance. Serves charter vessels, fishing boats. Visited by smaller cruise ship Le Laperouse (184 Pax) in 2018/19.
28	Whanagarō	Visit	1	Northland coastal township with near landlocked harbour, visited by Caledonian Sky in 2018/19.
29	White Island	Visit	5	Cruise visit - Offshore active volcano in Bay of Plenty 48 km W of Mainland.
30	Whitianga	Visit	1	Second largest township (pop 5,000) on Coromandel. Visited by Caledonian Sky in 2018/19
31	Sub-Antarctic	Visit	11	Visits by smaller expedition type vessels to sub-Antarctic islands (7 visits). Passenger landings if allowed strictly limited for environmental reasons. Snares Island (2) Macquarie Island (2). Also Auckland Island & Campbell Island. To the east are Bounty Island and Antipodes.
Total			958	

Table A2: Ship Calls & Passenger Movements

#	Port Anchorage	Turn-around			INT	PAC	AUS	DOM	RTC	SNZ	Total
		Transit	around	Total							
1	Auckland	64	63	127	29,741	29,410	209,733	11,538	7,760	259	288,441
2	Tauranga	116	-	116	13,753	-	197,019	2,782	-	253	213,808
3	Wellington	110	-	110	7,432	-	186,187	2,931	-	-	196,549
4	P. Chalmers	107	1	108	3,415	-	206,070	946	-	103	210,430
5	Akaroa	91	-	91	4,189	-	162,744	2,542	-	-	169,474
6	Napier	75	-	75	-	-	114,506	4,051	-	156	118,714
7	Bay of Islands	65	-	65	16,778	3,147	90,037	4,206	-	-	114,168
8	Picton	45	-	45	6,375	-	69,547	630	-	156	76,708
9	Gisborne	19	-	19	602	-	23,835	2,265	-	-	26,702
10	Stewart Island	17	-	17	473	-	3,886	1,222	-	290	5,871
11	Lyttelton	15	-	15	602	-	6,290	276	-	97	7,264
12	Kaikoura	9	-	9	-	-	3,107	1,130	-	-	4,237
13	Dunedin	9	-	9	-	-	-	916	-	419	1,335
14	Nelson	8	-	8	473	-	3237	565	-	-	4,275
15	Bluff	5	-	5	-	-	458	184	-	194	836
16	Ships Cove	5	-	5	-	-	-	368	-	97	465
17	Timaru	3	-	3	-	-	1,220	-	-	-	1,220
18	New Plymouth	2	-	2	-	-	1,228	92	-	-	1,320
19	Kaiteriteri	1	1	2	1,635	-	-	-	-	-	1,635
na	Other	8	-	-	-	-	-	1,230	-	-	1,230
Total excl visits		774	65	831	85,466	32,557	1,279,103	37,876	7,760	2,024	1,444,683
Transfer excl visits^		774	-	902	72,789	5,681	1,183,292	26,338	-	1,818	1,289,918
Disembark + Embark		65	-	65	12,677	26,876	95,811	11,538	7,760	206	154,868
Visit	Fiordland	111	-	111	1,143	-	217,154	1,616	-	538	220,451
Visit	SNZ	11	-	11	-	-	-	-	-	1,574	1,480
Visit	White Island	5	-	5	-	-	-	610	-	-	610

Notes: INT international; PAC Pacific; AUS Australian; DOM Domestic; RTC Round Trip cruise (i.e. Auckland to Auckland without any stopping at any other port); SNZ Sub- Antarctic Island.