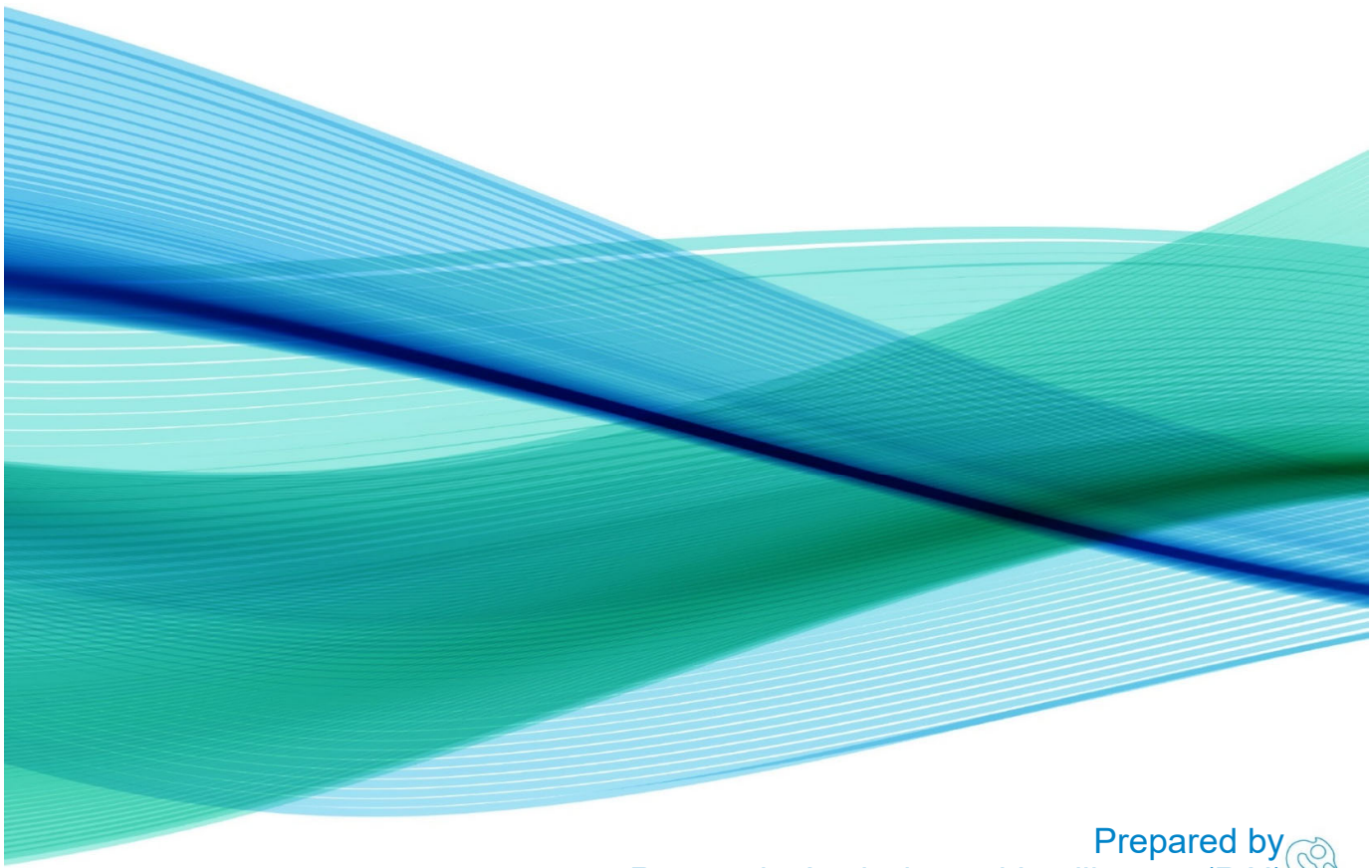
Nō te rere moana Aotearoa
MARITIME NEW ZEALAND

Recreational Craft Fatal Accidents: 2022 Update

September 2023



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Glossary

TERM	DEFINITION
Accident	A safety occurrence meeting the requirements detailed in the Maritime Transport Act 1994 s2(1), including an occurrence resulting in serious harm, which includes a death/fatality
Allision	A vessel striking an object such as a wharf or beacon
Bar	An area of sediment near the entrance to a river or harbour that can create hazardous sea states in certain tide and wind conditions
Canoe	An open paddle craft powered by single bladed paddles
Capsize	Vessel is rolled past 90 degrees, usually resulting in those on board entering the water
Collision	A vessel striking another vessel or person
Grounding	A vessel striking the sea floor, lake/river bed, ground, rocks, or shore
Dinghy	A small open vessel, whether powered by engine, oars, paddles, or sails
Incident	A safety occurrence, other than an accident, that is associated with the operation of a ship and affects or could affect the safety of operation
Inflatable	A vessel where primary floatation comes from inflated cells. Includes inflatable dinghies, rigid inflatable vessels (RIB/IRB) and rafts
Kayak	An enclosed or semi-enclosed paddle craft including sit-on-top and sea kayaks, powered by two bladed paddles.
MFED	Maritime Fatal Event Database
Missing Presumed Dead	A deceased person who's body is never recovered, including if they are subsequently declared dead
MNZ	Maritime New Zealand
MTA	Maritime Transport Act 1994
Overboard	A person falling from a vessel into the water either due to sea state or the person's own movement, with the vessel remaining afloat and upright
Power boat	A vessel primarily powered by an engine where design characteristics make it unsuitable to be classified as a dinghy, in particular being partially enclosed
RCCNZ	Rescue Coordination Centre New Zealand
Recreational boat/vessel/craft	A pleasure craft as described by MTA s2
Swamped	Vessel is filled with water due to a wave or other movement sufficient to compromise stability or buoyancy
Yacht	A vessel primarily powered by sail, excluding sailing dinghies

Summary

This document is a summary of recreational craft fatal accidents during 2022. This is in support of the Recreational Boating Fatal Accidents 2015-2020 report and the 2021 update available on the Maritime New Zealand website at https://www.maritimenz.govt.nz/recreational/safety/recreational-research.asp (previous analysis reports).

Each year a number of people die while participating in recreational boating, an activity pursued for enjoyment, or for the benefit of friends or family. Each accident is tragic and has its own unique set of circumstances, but the common factors across these accidents can help highlight ways that similar deaths may be prevented in the future.

In 2022 there was a total of **18** accidents resulting in **19** deaths or persons missing and presumed dead. This placed 2022 approximately at the 10 year average of 18 deaths per year. In 2022 one accident involved the deaths of two people.

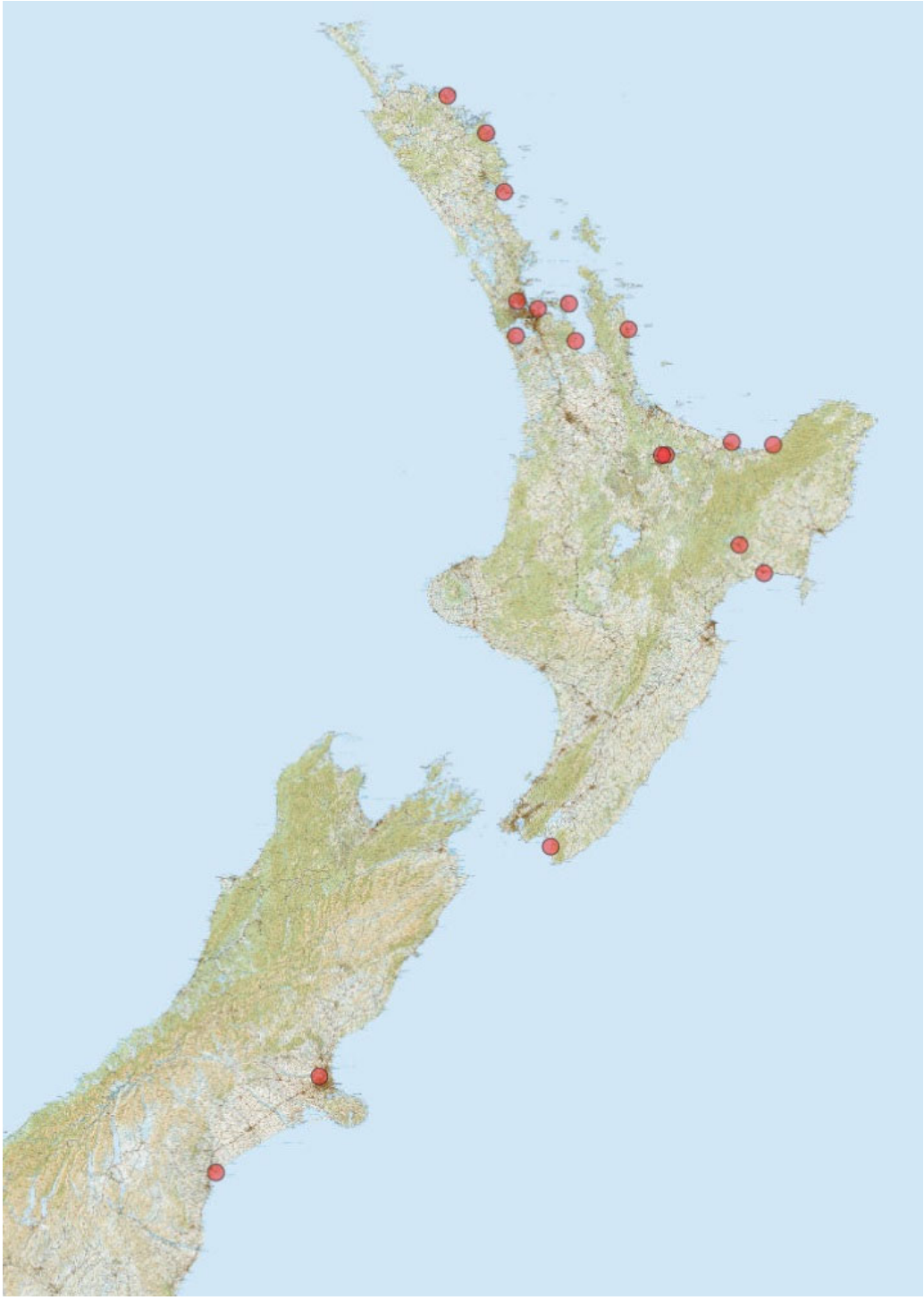
As with 2021, 2022 saw a higher proportion of accidents in the northern half of the North Island than shown in the 2015-2020 report, and a greater proportion of kayaks than either previous analysis reports. A number of these accidents occurred on inland waters, both lakes and rivers.

The majority of other accident characteristics followed the longer term trends shown in the 2015-2020 and 2021 reports, including an over representation of older males, and an over representation of Māori.

As described in detail in previous analysis reports, most accidents happened suddenly, resulting in people entering the water with little warning. Very few of them were able to call of help with waterproof communication equipment, and a significant proportion were not wearing lifejackets. Accidents where those who died had a lifejacket continued to include other factors that influenced the lifejacket not being sufficient to save their live. These finding continue to support the Safer Boating Forums safety guidelines to recreational participants.

1 Fatal Accident Overview

The map below shows all fatal recreational craft accidents in 2022:

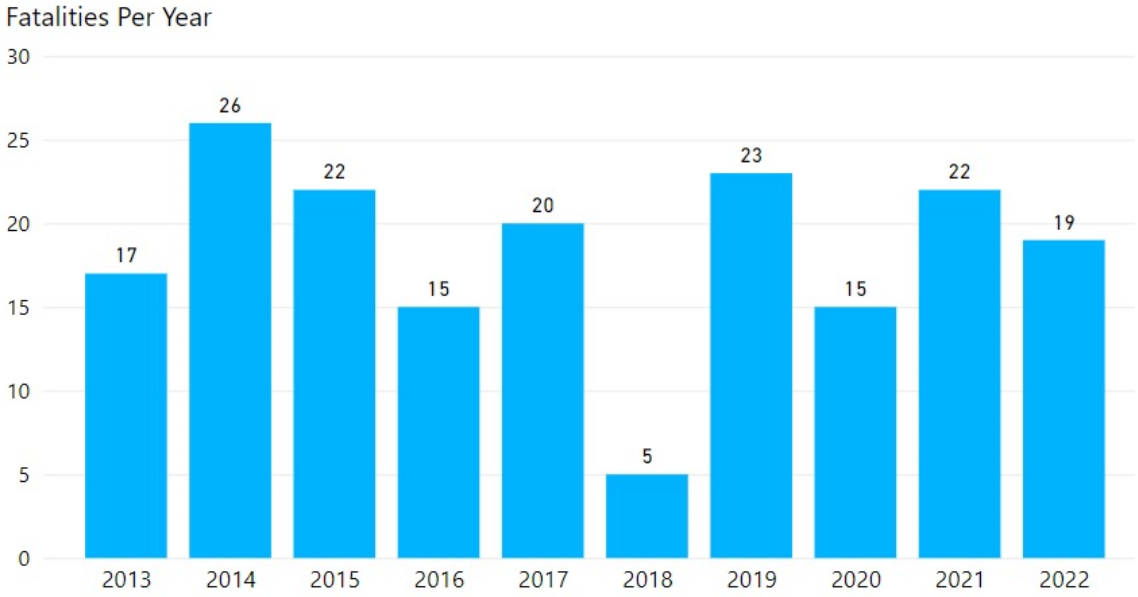


This shows that fatal accidents in 2022 occurred almost entirely in the North Island, and in particular, the northern half of the island. This is in contrast to the findings of the 2015-2020 report, where accidents were more evenly distributed across the country, generally in line with participation rates.

1.1 Fatal Accidents over Year and Season

Ten Year Trend

The graph below shows the number of fatalities per year over the last 10 years:



The 19 fatal accidents that occurred in 2022 placed that year approximately at the 10 year average of 18 deaths.

There is however no significant trend in annual deaths over this period, which has become largely static despite the slight increase in the 10 year trend due to the relatively low 2012 figure no longer being in the 10 year window.

However the increasing recreational participation described in the 2015-2020 report would also indicate that the recreational craft fatality rate[1] is decreasing over this time period

It can also be noted that both a high outlier like 2019 or a low outlier like 2018 do not predict future trends, with a majority of years falling between 15 and 22 fatalities per year.

Seasonal Variation

Season	Number of Fatalities
Summer	7 (37%)
Autumn	3 (16%)
Winter	2 (11%)
Spring	7 (37%)

The seasonal variation of 2022 fatal accidents closely followed the trend identified in the previous analysis reports, with a peak in spring and summer, and a drop over winter and autumn.

[1] Rate being accident count divided by estimated participated numbers, often expressed as *x* fatalities per 100,000 participants

1.2 Fatal Accidents by Location and Waters

By Region

The below table details the number of fatalities for each region in New Zealand and the percentage of total fatalities for the country this represents:

Region	Number of Fatalities	Percentage of 2022 Total Fatalities
Northland	**3**	**16%**
Auckland	**5**	**26%**
Waikato	**2**	**11%**
Bay of Plenty	**4**	**21%**
Gisborne	**0**	**0%**
Taranaki	**0**	**0%**
Hawkes Bay	**2**	**11%**
Manawatu	**0**	**0%**
Wellington	**1**	**5%**
Marlborough	**0**	**0%**
Nelson	**0**	**0%**
Tasman	**0**	**0%**
West Coast	**0**	**0%**
Canterbury	**2**	**11%**
Otago	**0**	**0%**
Southland	**0**	**0%**
Outside New Zealand	**0**	**0%**

-Note a vessel outside of New Zealand is counted if it was a "New Zealand ship"[2] at the time of the accident

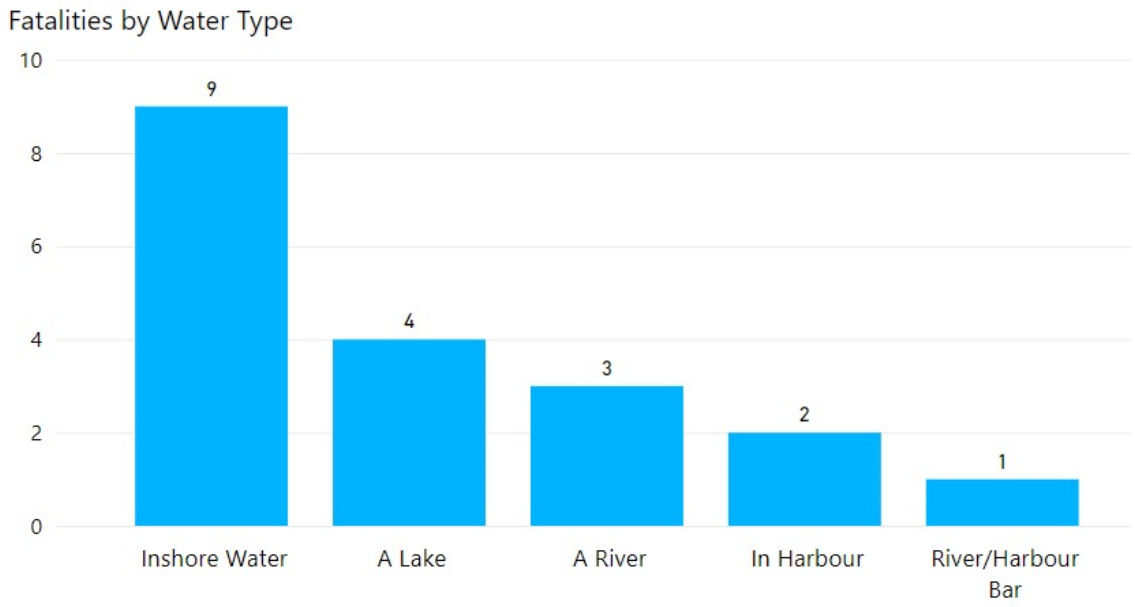
As show in the overview map, most fatal accidents in 2022 occurred in the northern half of the North Island. This is similar to the distribution identified in the 2021 analysis, and is in contrast to the finding of the 2015-2020 report, where accidents were more evenly distributed across the country, generally in line with participation rates. Bay of Plenty and Auckland in particular were above their historical proportions.

Details of fatalities per region per year are available in Appendix 1.

[2] Maritime Transport Act 1994, s 2(1)

By Type of Water

The graph below shows the number of fatalities for each type of waterway:



Note that “Inshore” captures a significant number of accidents as this is defined as up to 12nm from shore. Almost all inshore accidents occurred <1nm from shore.

2022 had an increase in accidents occurring on inland waterways, in particular lakes.

2 Fatal Accidents by Vessel Characteristics

2.1 Basic Vessel Type

The table below details the number of fatalities for each basic vessel type[3]:

Basic Vessel Type	Number of Fatalities	Number of Vessels
Power Boat	4	3
Dinghy	7	7
Kayak/Canoe	6	6
Inflatable	1	1
Yacht	0	0
Jet Ski	1	1

[3] Basic vessel type is a simplification of vessel type often used during qualitative research, reporting, and when sharing data between organisation. More specific vessel type analysis is available in the 2015-2020 report.

This shows a significant shift away from power boats being involved in the majority of accidents towards kayaks and dinghies. These were particularly present in accidents occurring on inland waterways as described in section 1.2.

Details of fatalities per vessel type per year and per region are available in Appendix 1.

2.2 Vessel Length

The table below shows the split of vessels over and under 6m:

Basic Vessel Type	Number of Fatalities	Number of Vessels
6m or less	19	18
Greater than 6m	0	0

Accidents in 2022 occurred entirely on vessels 6m or less in length.

3 Demographic Details

3.1 Age

Similar to the long term trend, there was an over representation of older victims in 2022, with the median age being 53. Five victims were under the age of 40, with all but one of them being on board a kayak or pack raft. The historical trend is for younger victims to be primarily on paddle craft and older victims primarily on power boats, however in 2022 a large number of the older victims were on paddle craft or powered dinghies.

3.2 Gender

Of the 19 people that died in 2022, 18 were male, and one was female. This ratio is an overrepresentation of males compared to the longer term trend.

3.3 Ethnicity[4]

Of those who died in 2022 seven (39%) were identified as Māori, three (17%) as Pacific Peoples, two (11%) as NZ European, one (6%) as other European, and six (28%) were unknown. This is a significant increase and overrepresentation of Māori, who have previously been identified as being approximately 12% of the boating population, and a less dramatic overrepresentation of Pacific Peoples.

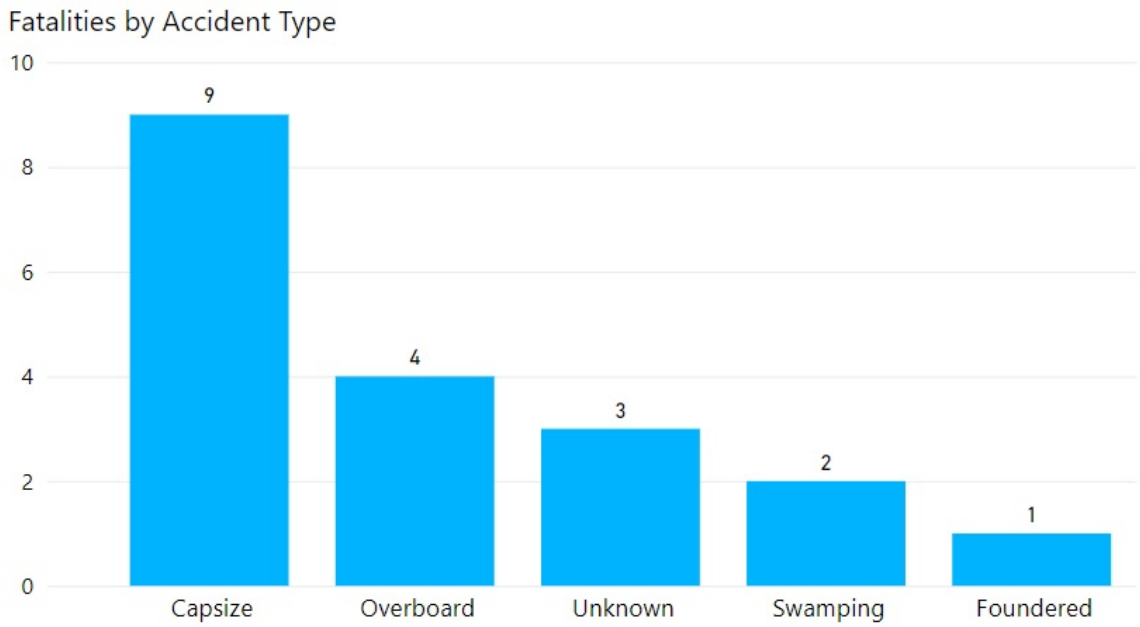
Note that ethnicity for short term analysis such as this report is gathered primarily from Police reports or the input of Maritime New Zealand investigation staff. Longer term this data will be cross referenced with coronial and Water Safety New Zealand data to improve accuracy.

[4] Long term ethnicity data for 2015-2020 report provided primarily by Water Safety New Zealand, with additional input from investigation findings via Police or Maritime New Zealand investigation staff.

4 Accident Types

4.1 Overview

Each fatal accident has at least one descriptor added to it that described the nature of the accident at the centre of the bowtie model[5].



This is a greater proportion of capsize accidents in relation to overboard accidents when compared to the previous analysis reports. This is in part because a majority of the kayak accidents involved capsizes, whereas in the longer term data kayak accidents were more likely to be overboard accidents where the craft remained floating upright. It should be noted that the distinction between a capsize and an overboard accident can be difficult to determine in some cases, in particular with sit-on-top kayaks or where the accident was not observed by survivors or bystanders.

Of significance was the lack of any impact (grounding, collision, etc.) accidents, mirrored by the relatively low rate of power boat accidents.

The single foundered accident was a vessel that sank due to flooding from the failure of a poor quality repair. Accidents of this nature where a vessel sinks due to a structural or system (plumbing etc.) failure are rare, with most accidents occurring due to sea state and/or vessel handling.

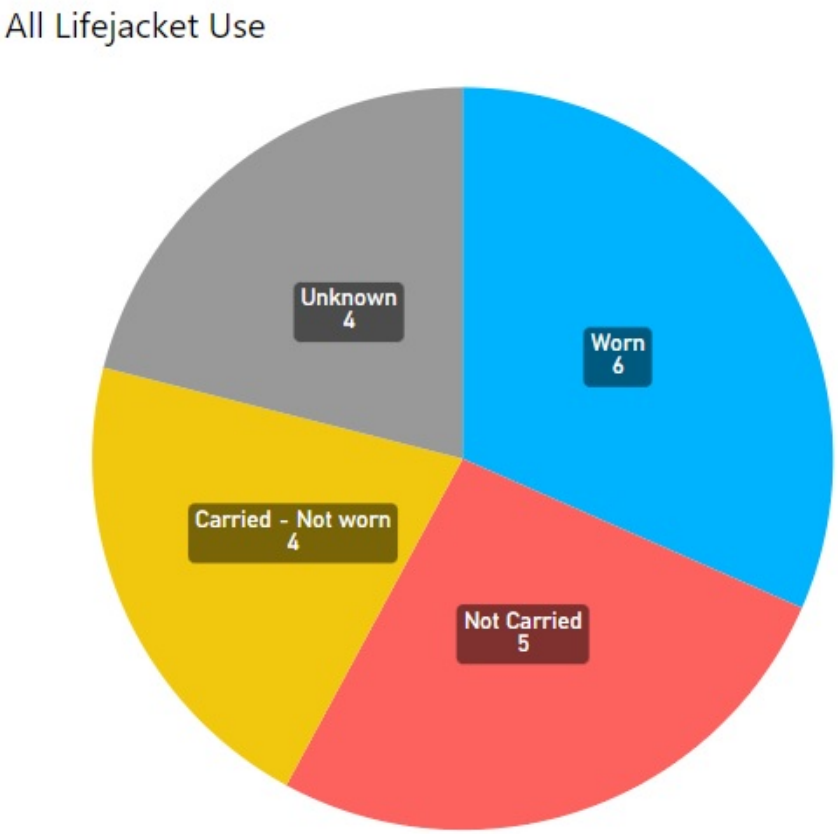
As with the previous accident analysis, most of these accidents happened suddenly, resulting in the victims ending up in the water with little warning.

[5] The bowtie model is detailed in the Recreational Boating Fatal Accidents: 2015-2020 report

5 Safety Equipment Details

5.1 Lifejacket Overview

The chart below shows the lifejacket use recorded for each fatality. With no impact/traumatic accidents occurring in 2022, lifejacket use was applicable to all accidents.



5.2 Lifejacket Carriage

As shown in the 5.1 chart, only ten (53%) people who died were known to have had a lifejacket available to them on board the vessel. Five people (26%) were known to not have a lifejacket available on board, which is above the historical average.

5.3 Lifejacket Wearing

As shown in the 5.1 chart, nine (47%) people who died were not wearing a lifejacket when they entered the water.

Of the six accidents where the victim was wearing a lifejacket, two involved victims trapped under a vessel, two had a lifejacket that was not inflated, one was pinned against a log in a fast flowing river, and one person who was found in the water had died from a medical event.

This means that only two accidents, where the lifejacket did not prevent the death, was possibly due to lifejacket performance, failure, or appropriate use.

5.4 Communication Devices

As noted in previous reports, very few fatal accidents involve people who were able to call for help in some way. This trend continued in 2022, indicating that most of those who die on the water either weren't carrying waterproof communication devices, or those that were weren't accessible following a likely sudden capsize, overboard, etc.

High profile accidents such as on the Manukau Harbour bar in 2021 also show the limitations of communication via cell phone following an accident. If the position of the survivor had not been able to be determined from their cell signal[6] then the likelihood of their rescue may have reduced.

[6] As described in the final report from the Transport Accident Investigation Commission, reference: MO-2021-204

Appendix A: 2015-2022 Data Tables

Deaths Per Year (2011-2022)

Year	Number of Fatalities
2011	20
2012	13
2013	17
2014	26
2015	22
2016	15
2017	19
2018	5
2019	23
2020	14
2021	22
2022	19

Deaths Per Region Per Year (2015-2022)

Region	2015	2016	2017	2018	2019	2020	2021	2022	Total
Northland	2	2	3	3	5	0	2	3	**20**
Auckland	4	0	6	0	3	6	5	5	**25**
Waikato	4	1	0	0	3	1	3	2	**14**
Bay of Plenty	2	0	6	0	2	0	2	4	**16**
Gisborne	0	1	0	0	0	0	1	0	**2**
Taranaki	1	2	1	0	0	0	1	0	**5**
Hawkes Bay	0	1	0	0	0	0	0	0	**1**
Manawatu	1	0	0	0	0	1	0	0	**2**
Wellington	3	0	2	0	0	2	3	1	**11**
Marlborough	0	0	0	0	1	1	0	0	**2**
Nelson	0	0	0	0	0	0	0	0	**0**
Tasman	0	0	0	0	0	1	0	0	**1**
West Coast	1	2	1	0	2	0	1	0	**7**
Canterbury	0	2	3	0	1	1	0	2	**9**
Otago	3	0	0	1	1	1	2	0	**8**
Southland	1	2	1	1	4	1	2	0	**12**
Outside New Zealand	0	2	0	0	1	0	0	0	**3**

Orange shading indicates where one year accounts for 25% or more of a regions total (min total of 8)

Deaths Per Basic Vessel Type Per Region (2015-2021)

Region	Dinghy	Inflatable	Jet Ski	Kayak	Power Boat	Yacht	Other	Total
Northland	10	2	1	2	4	1	0	**20**
Auckland	5	2	1	3	9	1	3	**24**
Waikato	1	1	1	4	4	0	1	**12**
Bay of Plenty	1	1	1	5	4	1	0	**16**
Gisborne	1	0	0	0	1	0	0	**2**
Taranaki	0	1	1	0	3	0	0	**5**
Hawkes Bay	1	0	0	1	1	0	0	**3**
Manawatu	1	0	0	1	0	0	0	**2**
Wellington	3	4	0	2	0	1	0	**11**
Marlborough	0	0	0	0	2	0	0	**2**
Nelson	0	0	0	0	0	0	0	**0**
Tasman	0	0	0	1	0	0	0	**1**
West Coast	0	3	0	2	2	0	0	**7**
Canterbury	1	0	1	2	4	1	0	**9**
Otago	0	1	0	1	6	0	0	**8**
Southland	1	1	0	1	8	1	0	**12**
Outside New Zealand	0	0	0	0	0	3	0	**3**

Orange shading indicates where one vessel type accounts for 35% or more of a regions total (min total of 5)

Deaths Per Basic Vessel Type Per Year (2015-2022)

Vessel Type	2015	2016	2017	2018	2019	2020	2021	2022	Total
Dinghy	4	2	3	2	4	3	4	7	**27**
Inflatable	3	1	3	2	1	3	1	1	**14**
Jet Ski	1	1	1	0	0	0	3	1	**7**
Kayak	6	3	1	1	2	3	3	6	**25**
Power Boat	6	6	6	0	14	5	10	4	**52**
Yacht	1	2	4	0	1	1	0	0	**8**
Other	1	0	1	0	1	0	1	0	**4**

Orange shading indicates where one year accounts for 20% or more of a vessel's total (min total of 5)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