

# Recreational Craft Fatal Accidents: 2021 Update

August 2022



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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 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 2021. This is in support of the Recreational Boating Fatal Accidents 2015-2020 report available on the Maritime New Zealand website at <https://www.maritimenz.govt.nz/recreational/safety/recreational-research.asp>

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 2021 there was a total of **18** accidents resulting in **22** deaths or persons missing and presumed dead. This placed 2021 above the 10 year average of 17 deaths per year. In 2021 two accidents involved the deaths of two or more people, including three people dying in one accident on the Manukau Harbour Bar, the worst recreational boating accident since 2014.

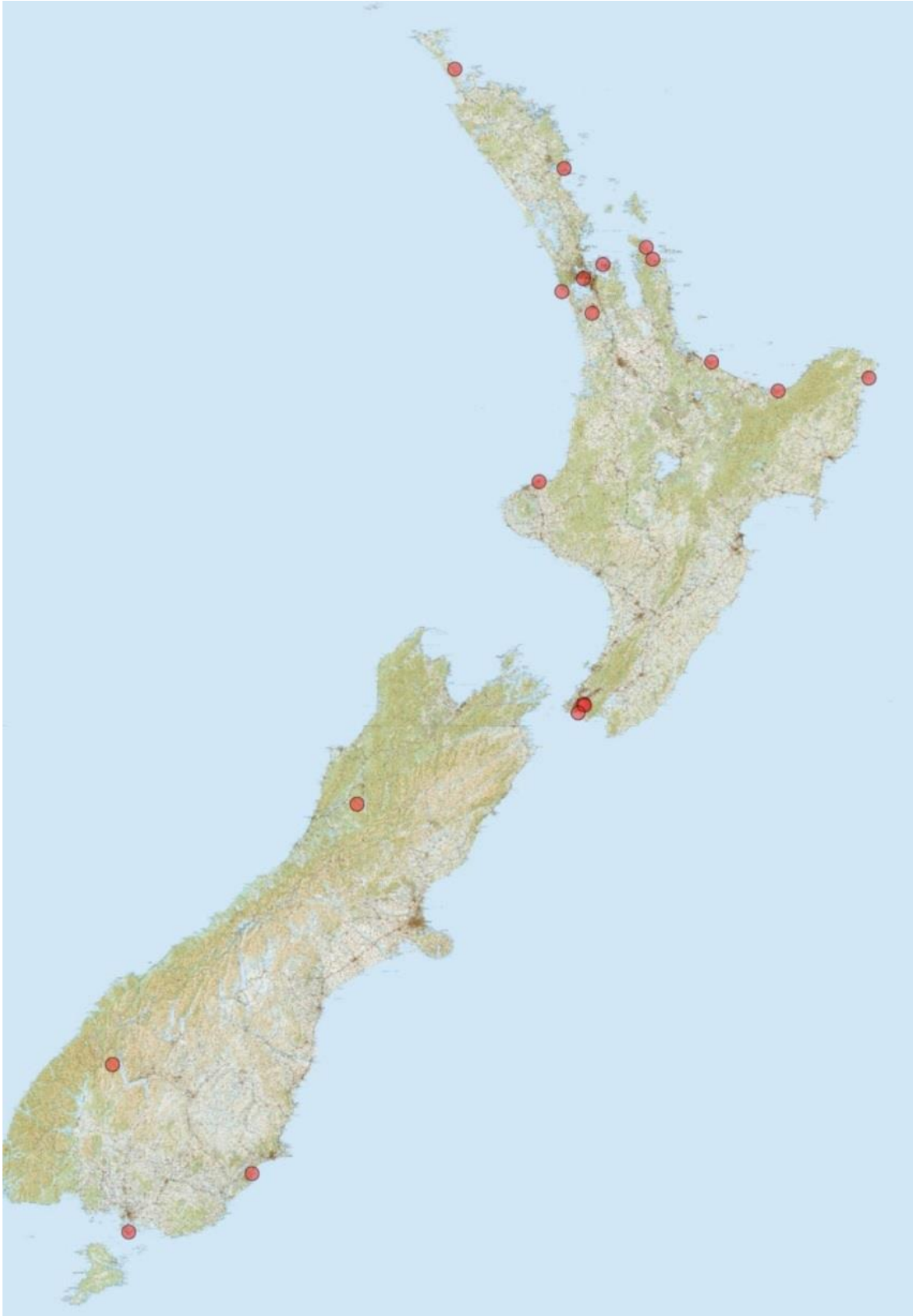
2021 saw a higher proportion of accidents in the northern half of the North Island than shown in the 2015-2020 report, and a greater proportion of power boats and jet skis, with a reduced proportion of dinghies and inflatables. A number of the other accidents characteristics followed this vessel pattern, including a higher proportion of capsize accidents, which are more often associated with power boat accidents.

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

As described in detail in the in the 2015-2020 report, 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. 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 2021:



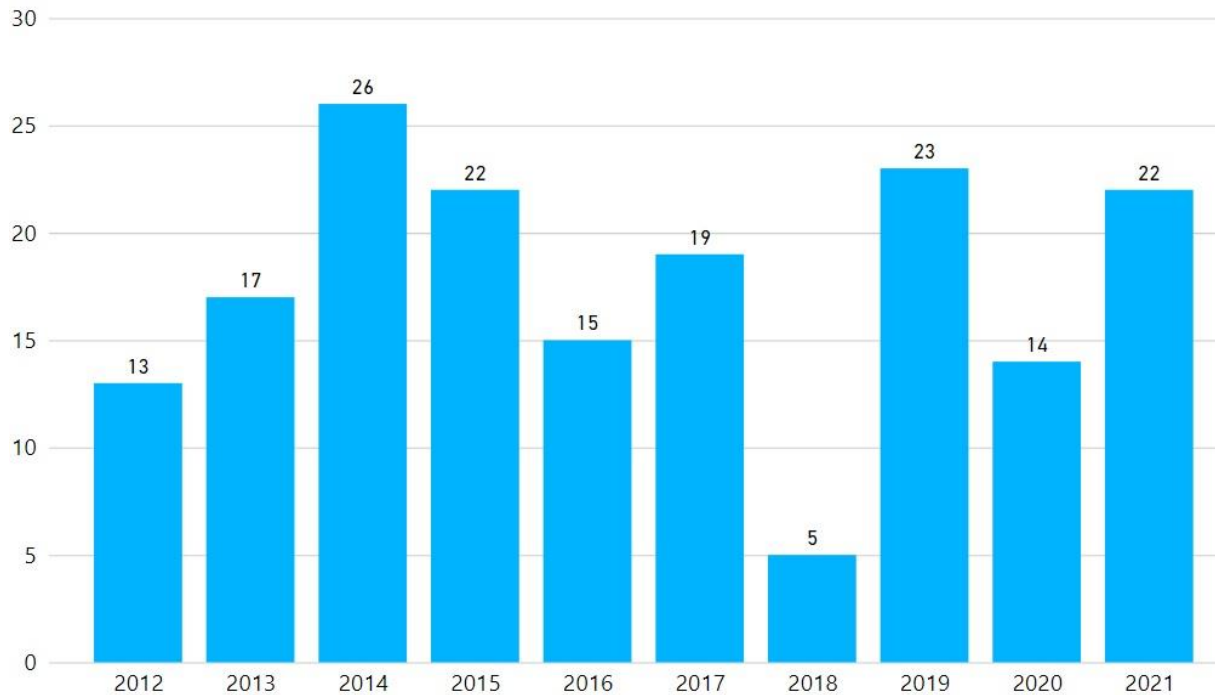
This shows that fatal accidents in 2021 primarily occurred in the North Island, in particular the northern half of the island. This is in contrast to the finding of the 2015-2020 report, where accidents were more evenly distributed across the country, generally in line with participation rates.

## 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:

Fatalities Per Year



The 22 fatal accidents that occurred in 2021 placed that year above the 10 year average of 17 deaths.

There is however no significant trend in annual deaths over this period, although a slight reduction in the number of fatalities can be noted across both the 10 years data and the six years of this report. The increasing recreational participation described in the 2015-2020 report would also indicate that the recreational craft fatality rate is decreasing.

It can also be noted that both a high outlier like 2014 or a low outlier like 2018 do not predict future trends.

### Seasonal Variation

Season	Number of Fatalities
Summer	8 (36%)
Autumn	4 (18%)
Winter	2 (9%)
Spring	8 (36%)

The seasonal variation of 2021 fatal accidents closely followed the trend of the 2015-2020 data, with a peak in summer and spring, and a drop over winter and autumn.

## 1.2 Fatal Accidents by Location and Waters

### By Region

Below is a table that 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 2021 Fatalities
Northland	2	9%
Auckland	5	23%
Waikato	3	14%
Bay of Plenty	2	9%
Gisborne	1	5%
Taranaki	1	5%
Hawkes Bay	0	0%
Manawatu	0	0%
Wellington	3	14%
Marlborough	0	0%
Nelson	0	0%
Tasman	0	0%
West Coast	1	5%
Canterbury	0	0%
Otago	2	9%
Southland	2	9%
Outside New Zealand	0	0%

-Note a vessel outside of New Zealand is counted if it was a “New Zealand ship”<sup>1</sup> at the time of the accident

As show in the overview map, most fatal accidents in 2021 occurred in the northern half of the North Island. This 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.

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

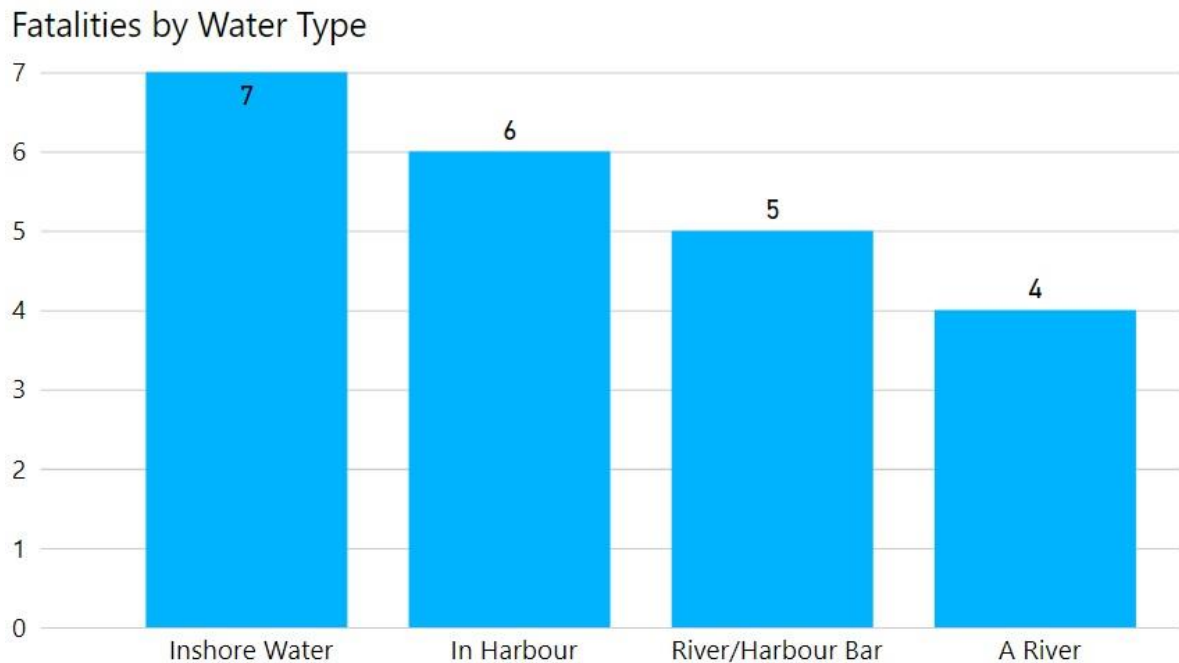
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<sup>1</sup> Maritime Transport Act 1994, s 2(1)



## 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.

## 2 Fatal Accidents by Vessel Characteristics

### 2.1 Basic Vessel Type

The table below lists the number of fatalities for each basic vessel type:

Basic Vessel Type	Number of Fatalities	Number of Vessels
Power Boat	10	7
Dinghy	4	4
Kayak/Canoe	3	3
Inflatable	1	1
Yacht	0	0
Jet Ski	3	3
Other	1	1

The vessel classified as “Other” in 2021 was a waka ama.

This shows a greater proportion of power boats and jet skis involved in fatal accidents in 2021 compared to the 2015-2020 period, and a significantly lower proportion of dinghies and inflatables.

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	21	18
Greater than 6m	1	1

Accidents in 2021 overwhelming occurred 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 2021, with the median age being 55. A majority of those under this age were on board kayaks or jet skis, and a majority over this age were in power boats or dinghies.

### 3.2 Gender

Of the 22 people that died in 2021, 20 were male, and 2 were female. This ratio of 10:1 male to female is almost identical to the longer term trend.

### 3.3 Ethnicity<sup>2</sup>

Of those who died in 2021 6 (27%) were identified as NZ European, 5 (23%) as Māori, and 3 (14%) as Thai, 4 (18%) were in other groups, and 4 were unknown. This is an overrepresentation of Māori, who have been identified as being approximately 12% of the boating population. The three Thai who died were all involved in a single accident.

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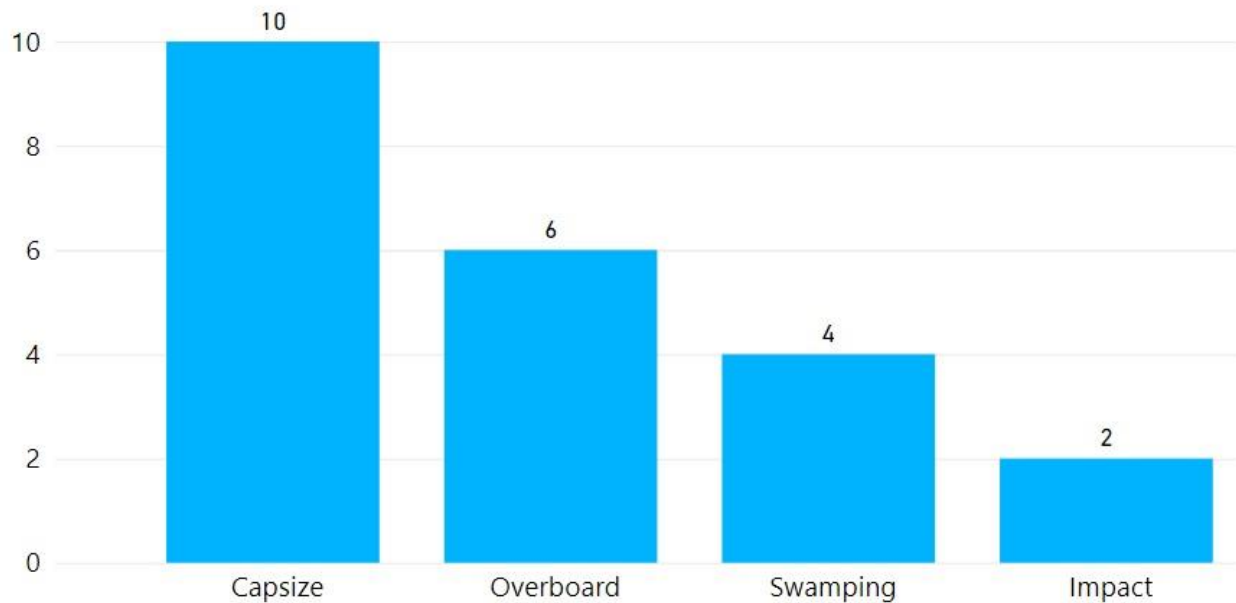
<sup>2</sup> Ethnicity data provided primarily by Water Safety New Zealand, with additional input from investigation findings via Police or Maritime New Zealand staff.

## 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<sup>3</sup>.

Fatalities by Accident Type



This is a greater proportion of capsized accidents in relation to overboard accidents when compared to the 2015-2020 accident data, likely as a result of the greater number of small power boats involved in the fatal accidents in 2021. The 2015-2020 analysis found that small power boats were more likely to be involved in capsized accidents, with kayaks and dinghies/inflatables more likely to be involved in overboard accidents where the vessel remained floating and upright.

There was a reduction in impact accidents (grounding, collisions, allisions, etc) compared to the 2015-2020 data.

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

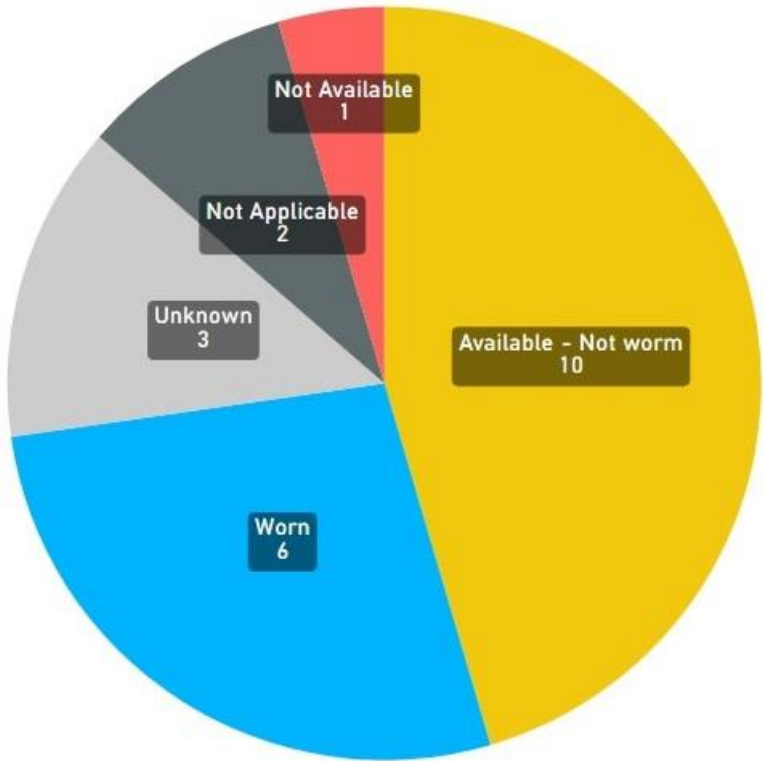
<sup>3</sup> The bowtie model is detailed in the Recreational Boating Fatal Accidents: 2015-2020 report

# 5 Safety Equipment Details

## 5.1 Lifejacket Overview

The chart below shows the lifejacket use recorded for each fatality. Accidents where the death was caused by traumatic injuries are coded as “Not Applicable”, as the lifejacket did not play a role in the outcome of the accident.

All Lifejacket Use



## 5.2 Lifejacket Carriage

As shown in the 5.1 chart, in accidents where a lifejacket could have assisted the deceased (excluding traumatic accidents), 16 (80%) people who died had a lifejacket available to them on board the vessel. In only one death did the deceased did not have a lifejacket available to them on board.

## 5.3 Lifejacket Wearing

As shown in the 5.1 chart, in accidents where a lifejacket could have assisted the deceased (excluding traumatic accidents), 11 (55%) people who died were not wearing a lifejacket when they entered the water. As described in 5.2, a majority of those who died without a lifejacket on had one available on board the vessel. In six deaths (30%) the deceased was wearing a lifejacket.

Of the six accidents where the victim was wearing a lifejacket, three involved lifejackets that failed to perform as expected with a lifejacket failing to inflate and another two coming off the victim, two involved extreme conditions including a victim trapped under a vessel and another in river rapids, and in one the factors are unknown.

## 5.4 Communication Devices

As noted in the 2015-2020 report, very few fatal accidents involve people who were able to call for help in some way. This trend continued in 2021, 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 capsizing, overboard, etc.



# Appendix A: 2015-2021 Data Tables

## Deaths Per Year Over Ten Years

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

## Deaths Per Region Per Year

Region	2015	2016	2017	2018	2019	2020	2021	Total
Northland	2	2	3	3	5	0	2	17
Auckland	4	0	6	0	3	6	5	20
Waikato	4	1	0	0	3	1	3	12
Bay of Plenty	2	0	6	0	2	0	2	12
Gisborne	0	1	0	0	0	0	1	2
Taranaki	1	2	1	0	0	0	1	5
Hawkes Bay	0	1	0	0	0	0	0	1
Manawatu	1	0	0	0	0	1	0	2
Wellington	3	0	2	0	0	2	3	10
Marlborough	0	0	0	0	1	1	0	2
Nelson	0	0	0	0	0	0	0	0
Tasman	0	0	0	0	0	1	0	1
West Coast	1	2	1	0	2	0	1	7
Canterbury	0	2	3	0	1	1	0	7
Otago	3	0	0	1	1	1	2	8
Southland	1	2	1	1	4	1	2	12
Outside New Zealand	0	2	0	0	1	0	0	3

Orange shading indicates where one year accounts for 30% or more of a regions total (min total of 5)



## Deaths Per Basic Vessel Type Per Region 2015-2021

Region	Dinghy	Inflatable	Jet Ski	Kayak	Power Boat	Yacht	Other	Total
Northland	8	2	1	1	4	1	0	17
Auckland	4	1	1	3	6	1	3	19
Waikato	1	1	1	3	3	0	1	10
Bay of Plenty	3	0	1	3	4	1	0	12
Gisborne	1	0	0	0	1	0	0	2
Taranaki	0	1	1	0	3	0	0	5
Hawkes Bay	0	0	0	0	1	0	0	1
Manawatu	1	0	0	1	0	0	0	2
Wellington	2	4	0	2	0	1	0	10
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	0	0	1	1	4	1	0	7
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 40% or more of a regions total (min total of 5)

### Deaths Per Basic Vessel Type Per Year

Vessel Type	2015	2016	2017	2018	2019	2020	2021	Total
Dinghy	4	2	3	2	4	3	4	<b>20</b>
Inflatable	3	1	3	2	1	3	1	<b>13</b>
Jet Ski	1	1	1	0	0	0	3	<b>6</b>
Kayak	6	3	1	1	2	3	3	<b>19</b>
Power Boat	6	6	6	0	14	5	10	<b>48</b>
Yacht	1	2	4	0	1	1	0	<b>8</b>
Other	1	0	1	0	1	0	1	<b>4</b>

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



SAFE  
SECURE  
CLEAN