

# Boating incidents in New South Wales

Statistical Statement 2012-13



Prepared by the Maritime Management Centre,  
Transport for NSW  
18 Lee Street  
Chippendale NSW 2008  
Postal address: PO Box K659 Haymarket NSW 1240  
Internet: [www.transport.nsw.gov.au](http://www.transport.nsw.gov.au)  
Email: [mmc@transport.nsw.gov.au](mailto:mmc@transport.nsw.gov.au)

**Further information:**

For further information concerning vessel incident  
statistics for New South Wales, write to the:  
Maritime Management Centre  
PO Box K659  
Haymarket NSW 1240

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# Contents

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<b>1</b>	<b>Introduction</b>	<b>2</b>
<b>2</b>	<b>Key points in 2012–13</b>	<b>3</b>
<b>3</b>	<b>Key numbers in 2012–13</b>	<b>4</b>
<b>4</b>	<b>Latest incident trends</b>	<b>7</b>
<b>5</b>	<b>Recreational incident patterns</b>	<b>10</b>
<b>6</b>	<b>Lifejacket wear</b>	<b>13</b>
<b>7</b>	<b>Commercial vessels</b>	<b>15</b>
<b>8</b>	<b>Discussion and conclusions</b>	<b>16</b>





# 1 Introduction

This statement summarises boating incidents recorded within the State of New South Wales for the Financial Year ended 30 June 2013, with an emphasis on recreational boating incidents.

It provides an update on boating safety statistics since the publication of the Transport for NSW report, *Boating Incidents in NSW – Statistical report for the 10-year period ended 30 June 2012*.

The previous 10-year report establishes the ‘baseline’ against which data for 2012-13 is interpreted. It also provides the background material and definitions applicable to this statement.







## 2 Key points in 2012–13

- The total number of incidents was significantly below the long term average, suggesting a continuing gradual improvement in overall safety risk.
- Total incident rates for both recreational vessels and for commercial vessels continue to fall.
- However, the number of fatalities (27) was relatively high. Twenty-six of these fatalities were on recreational vessels.
- More than 8 out of 10 people who drowned in recreational boating incidents were not wearing a lifejacket at the time of the incident. Statistically, this is a slight improvement on the ratio of more than 9 out of 10 recorded over the previous 10 years.
- Of the four people believed to have drowned despite wearing a lifejacket, two are suspected to have suffered a heart condition, while another of the victims is believed to have been wearing an ill-fitting lifejacket.
- It is possible that half the lives lost in recreational boating accidents could have been saved if all the people involved were wearing a lifejacket.
- A large majority (84.6%) of those killed in recreational boating incidents were male. In addition, a considerable proportion (20%) were aged 70 or above. All of these older victims were male.
- There was a relatively low prevalence of recreational vessel fatality incidents occurring in the cooler months of the year.
- Similarly, there was a low prevalence of serious injury incidents related to towing, open runabouts, enclosed waters or a lack of judgement.
- There was a relatively high prevalence of recreational vessel fatality incidents involving paddle/rowing craft or vessel capsize, as well as such incidents occurring in the early hours of the morning.
- Similarly, there was a high prevalence of serious injury incidents involving PWC, falling overboard, injuries on board, as well as such incidents occurring on open waters or involving vessels underway.



### 3 Key numbers in 2012–13

There were 27 fatalities, 63 serious injuries and 343 incidents related to boating recorded in the 12 month period to 30 June 2013 (Table 1). While fatalities were up by more than 42% compared with the previous year, serious injuries and total incidents remained virtually unchanged (increases of less than 2% and 5% respectively).

The number of fatalities in 2012–13 was the highest recorded since detailed records commenced in 1992. However, several of these fatalities may ultimately prove to be un-related to boating, pending ongoing police investigations (e.g. caused by a person's underlying medical condition).

**Table 1: Fatalities, serious injuries and related incident numbers for the 2012–13 financial year.**

Vessel category	Incident category				TOTAL INCIDENTS
	Fatalities	Fatal incidents	Serious injuries	Serious injury incidents	
Recreational	26*	22*	48	45	245
Commercial	1	1	12	11	60
Commercial/recreational	0	0	3	2	38
<b>TOTAL</b>	<b>27</b>	<b>23</b>	<b>63</b>	<b>58</b>	<b>343</b>
<b>Change on last year</b>	<b>+ 42.1%</b>	<b>+ 53.3%</b>	<b>+ 1.6%</b>	<b>+ 3.6%</b>	<b>+ 4.9%</b>

\* These totals include several incidents that are still subject to confirmation as boating incidents.

In 2012–13, there were 23 incidents involving one or more fatalities (6.7% of total) and 58 incidents involving serious injury but no fatalities (16.9% of total). Both these proportions are significantly higher than the long-term figures (2002–03 to 2011–12) of 3.8% and 12.6% respectively.

Most of the incidents (245 or 71.4%) involved only recreational vessels. This proportion is similar to the long-term figure of 69.6%.



In relation to recreational vessel fatality incidents during 2012–13:

- 50% were recorded as vessel capsizes, which is higher than the corresponding long-term figure of 33.6%.
- 59.1% involved a vessel underway, which is similar to the long-term figure of 60.5%.
- Open runabouts accounted for 45.4% of these incidents (versus 47.1% long-term).
- 22.7% of the incidents (five in all) involved paddle/rowing craft. This is relatively high in comparison to the long-term figure of 8.4%.
- Vessels less than 6 metres in length accounted for 83.3% of the incidents, a statistically similar result to the long-term percentage of 70.8%. As in past years, most of these were vessels less than 4.8 metres.
- The distribution of fatal incidents through the day broadly reflected past patterns, with most of the incidents occurring in the late morning to late afternoon period. However, a relatively high proportion (22.7% – five incidents) occurred in the early hours of the morning (between 12:00 and 6:00 am). The corresponding long-term figure is 5.9%.
- Compared with previous years, an even stronger majority of incidents occurred in the warmer months of October to March (72.7% in 2012–13 versus 52.1% during 2002–03 to 2011–12).
- Sixteen incidents (72.7%) occurred on enclosed (non alpine) waters, with five on open waters and one on alpine waters. Enclosed waters overall accounted for 77.3% of incidents, which is very similar to the long-term figure of 79.8%.
- Twenty-two of the victims (84.6%) were male, a statistically similar proportion to the long term figure of 90.2%.
- Five of the victims (20%) were aged 70 years or above, which is also a similar proportion to the long-term figure of 15%. All these victims were male.
- Of the 26 people who died in total, 21 are presumed to have drowned – 17 of whom should have been wearing a lifejacket under current laws. Crucially, only four of the 17 were wearing one – meaning as many as 13 lives could have possibly been saved if they had all been wearing a lifejacket.
- Of the four people believed to have drowned in 2012–13 despite wearing a lifejacket, two are suspected to have suffered a heart condition, while another of the victims is believed to have been wearing an ill-fitting lifejacket.
- The lifejacket wear rate amongst recreational boating drowning victims was 19%, meaning more than 8 out of 10 people who drowned in recreational boating incidents were not wearing a lifejacket.

## Personal Watercraft (PWC) Update for 2012-13:

Detailed long-term statistics on recreational PWC incidents are provided in the report *Personal Watercraft Incidents, Compliance and Feedback in New South Wales – Statistical report for the 10-year period ended 30 June 2012*.

In 2012–13 there were (involving a PWC):

- 21 incidents in total
- 11 serious injury incidents
- 0 fatality incidents


In addition:

- The overall incident rate for recreational PWC (217.3 per 100,000) was very similar to the long term average of 218.7 per 100,000
- The serious injury incident rate for recreational PWC (113.8 per 100,000) was significantly higher than the long-term average of 69.6 per 100,000.



### 3 Key numbers in 2012-13

Table 2: Incident Barometer – comparison of 2012-13 against previous 10 years (2002-03 to 2011-12) and summary of long-term trends.

Indicator	2012-13	Average previous 10 years (10 yr av.)	2012-13 statistical relationship to 10yr av.	Graph* showing 2012-13 vs. 10yr av.	Long-term trend
Total incidents	343	375.4	Lower		Initial increase; now decreasing
Total fatalities	27	16.7	Higher		Fluctuating
Total serious injuries	63	57.5	Not significantly different		Increasing in line with vessel numbers
Fatal incidents (recreational) per 100,000 vessels	9.6	5.6	Higher		Previous decline arrested by recent high values
Fatal incidents (commercial) per 10,000 vessels	1.1	2.4	Lower		Underlying decline
Serious injury incidents (recreational) per 100,000 vessels	19	17.5	Not significantly different		Fluctuating
Serious injury incidents (commercial) per 10,000 vessels	12.0	9.7	Not significantly different		Fluctuating

\*Key: ▲ 2012-13 value | 10 year average ■ statistical range of 10 year average



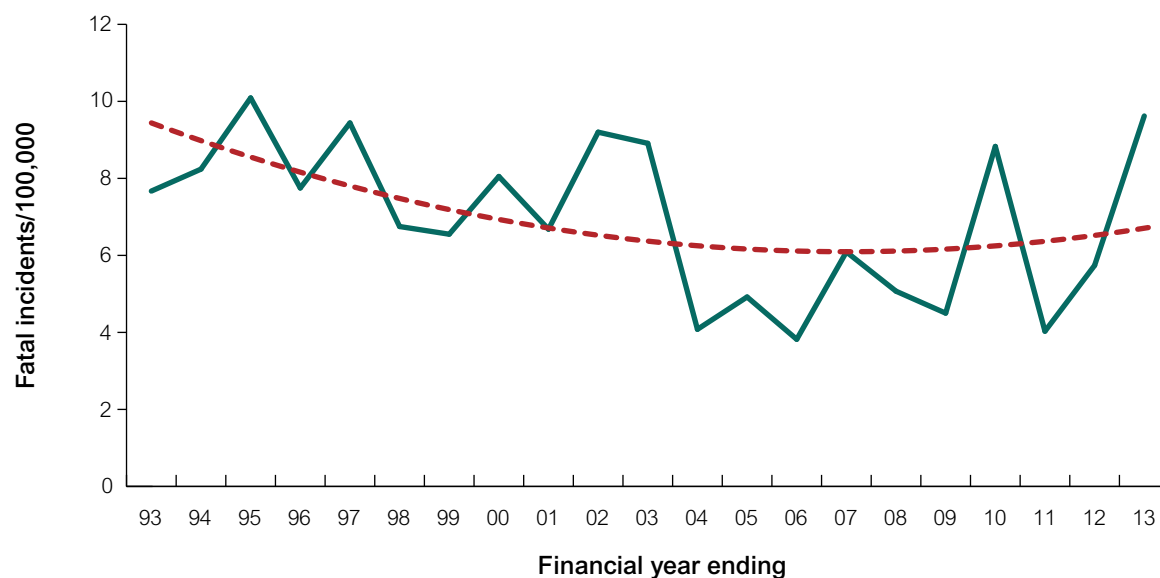




## 4 Latest incident trends

The relatively high recreational vessel fatality incident rate in 2012-13 (9.6 incidents per 100,000 vessels), along with a similarly high value in 2009-10, has arrested the previous long-term downward trend (Figure 1).

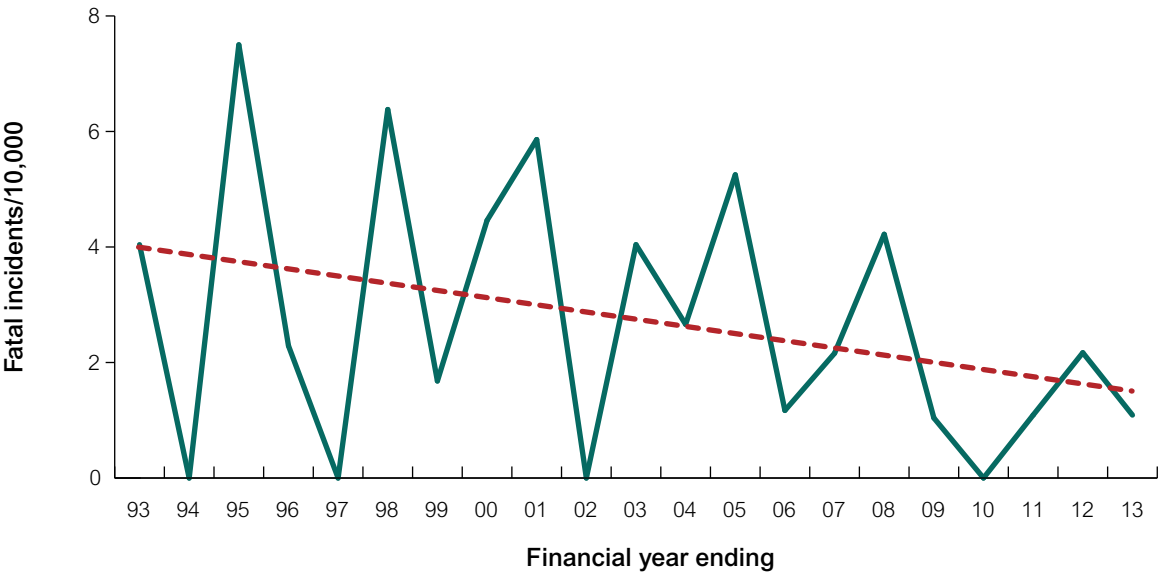
Figure 1: Fatal incidents per 100,000 registered recreational vessels.



## 4 Latest incident trends

However, the commercial vessel fatality incident rate in 2012-13 was relatively low (1.1 incidents per 10,000 vessels) and is continuing to display an underlying downward trend (Figure 2).

Figure 2: Fatal incidents per 100,000 commercial vessels\*.



\* Trend line fitted to non-overlapping 3-year averages of the data (i.e. '93-'95, '96-'98, etc.).

Overall incident rates for both recreational vessels (Figure 3) and commercial vessels (Figure 4) have continued to trend downwards.

Figure 3: Total incidents per 100,000 registered recreational vessels.

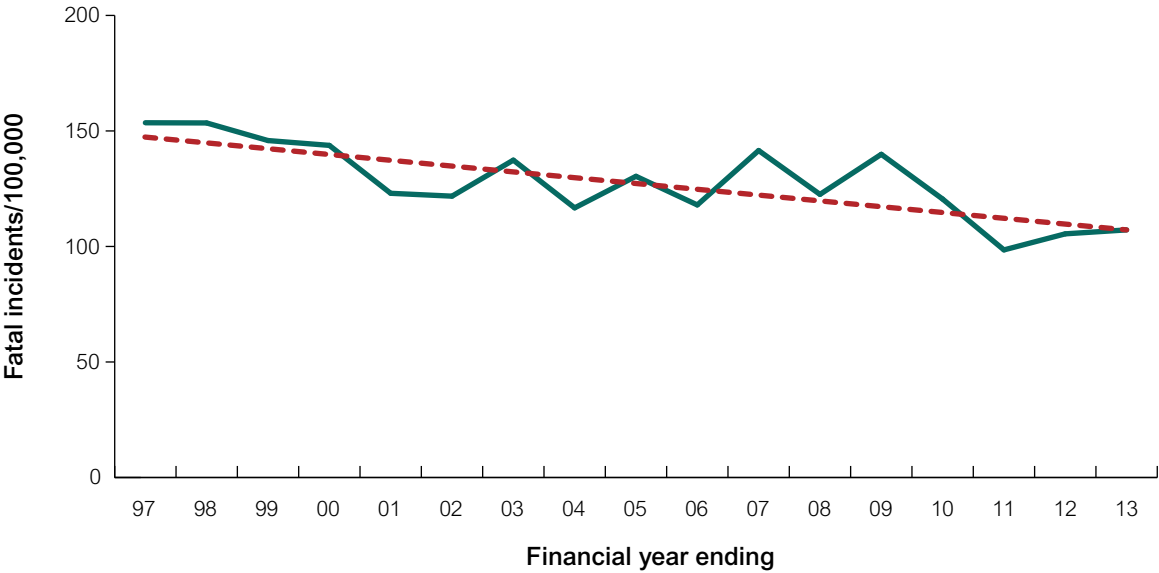
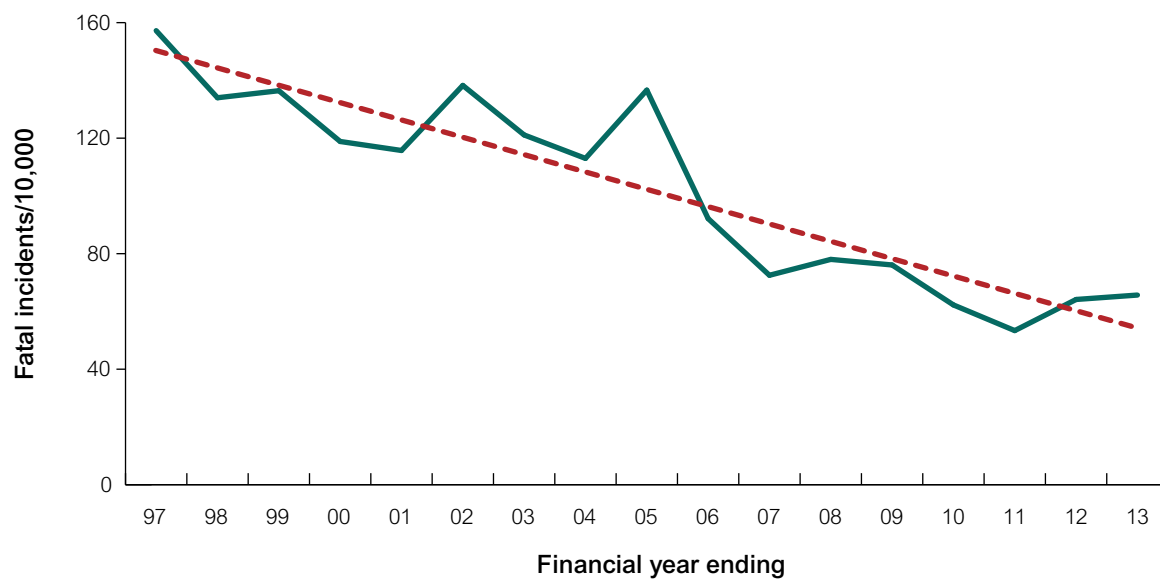




Figure 4: Total incidents per 10,000 commercial vessels.





## 5 Recreational incident patterns

Table 3 lists the key incident profile descriptors that applied to recreational boating fatality incidents in 2012-13. While most of the incident descriptors listed had a similar prevalence in 2012-13 compared with the previous 10 years, four descriptors (Capsizing, Paddle/rowing craft, October – March and, especially, 12:00 – 5:59) stood out in terms of relatively high percentages in 2012-13. In addition, the proportion of no-proper-lookout incidents in 2012-13 was quite high (at 13.6%) in comparison to the long-term figure (2.5%). However, this could not be statistically tested due to the higher percentage being based on low numbers.

Conversely, incidents occurring in the cooler months of April to September were proportionately less prevalent in 2012-13 than previously (Table 3).

Incidents that would have involved people being suddenly forced into the water (incident types capsizing and fall overboard) together accounted for 15 recreational vessel fatal incidents in 2012-13, representing 68.2% of all such incidents (Table 3). This is a similar proportion to the long-term figure of 58.8%. Capsize incidents alone accounted for 11 recreational vessel fatal incidents in 2012-13, representing exactly half of all such incidents during the year.

In addition to the information shown in Table 3, there were two recreational vessel fatal incidents caused by excess alcohol and one due to excess speed.



**Table 3: Recreational boating fatality incident numbers and percentages by key incident profile descriptors for 2012-13, with long-term percentages provided on the right for comparison.**

Instances where the percentage in 2012-13 is relatively high or low are denoted by upward or downward-pointing triangle symbols respectively. Grey symbols are used where the corresponding statistical confidence (2-tailed test of two proportions) is 80% or more; black symbols are used where the confidence is at least 95%.

Key incident profile descriptors*	2012-13 Number	2012-13 % of total (N=22)	2003-12 % of total (N=119)
<i>Incident type</i>			
Capsizing	11	50.0 ▲	33.6
Fall overboard	4	18.2	25.2
<i>Incident cause</i>			
No proper lookout	3	13.6	2.5
<i>Vessel operation</i>			
Underway	13	59.1	60.5
Towing	3	13.6	8.4
At anchor, berthed or moored	3	13.6	8.4
<i>Vessel type</i>			
Open runabout	10	45.4	47.1
Paddle/rowing craft	5	22.7 ▲	8.4
Towed person	3	13.6	9.2
<i>Vessel length (where known; N=18 &amp; 89)</i>			
<6 metres	15	83.3	70.8
6 metres or more	3	16.7	29.2
<i>Time of day</i>			
10:00am – 1:59pm	6	27.3	32.8
2:00pm – 5:59pm	6	27.3	25.2
12:00am – 5:59am	5	22.7 ▲	5.9
<i>Month</i>			
October – March	16	72.7 ▲	52.1
April – September	6	27.3 ▼	47.9
<i>Waterway type</i>			
Enclosed waters (including alpine)	17	77.3	79.8
Open (ocean) waters	5	22.7	20.2
<i>Boater age (fatality victims where age known; N=25 &amp; 133)</i>			
0-29 years	6	24.0	17.3
30-69 years	14	56.0	67.7
70 years plus	5	20.0	15.0

\* Not all descriptors recorded are shown, only those which accounted for at least 3 incidents in 2012-13. Descriptors are listed in the order they are discussed in the long-term incident report, *Boating Incidents in NSW – Statistical report for the 10-year period ended 30 June 2012*.

Table 4 lists the key incident profile descriptors that applied to recreational boating serious injury incidents in 2012-13. While most of the incident descriptors listed had a similar prevalence in 2012-13 compared with the previous 10 years, five descriptors (Fall overboard, injury onboard, PWC, Open waters and, especially, Underway) stood out in terms of relatively high percentages in 2012-13.

Conversely, incidents relating to enclosed waters (including alpine waters), open runabouts, and towing activities were proportionately less prevalent in 2012-13 than previously (Table 4). Because there were only two lack of judgement incidents in 2012-13, this descriptor is not included in the data shown in Table 4. However, the proportion of such incidents in 2012-13 was significantly lower (at 4.4%) than the corresponding long-term figure (18.7%).

## 5 Recreational incident patterns

Falling overboard, collision with a vessel and injury onboard together accounted for 19 recreational vessel serious injury incidents in 2012-13, representing 42.2% of all such incidents (Table 4). This is a significantly greater proportion than the long-term figure of 23.0%. The proportion of injury onboard incidents in particular (13.3%) is considerably greater than the corresponding long-term figure (3.7%).

In addition to the information shown in Table 4, there were two recreational vessel serious injury incidents caused by excess speed and one due to excess alcohol.

**Table 4: Recreational boating serious injury incident numbers and percentages by key incident profile descriptors for 2012-13, with long-term percentages provided for on the right for comparison. Symbols used as per Table 3.**

Key incident profile descriptors*	2012-13 Number	2012-13 % of total (N=45)	2003-12 % of total (N=374)
<i>Incident type</i>			
Fall overboard	7	15.6 ▲	7.5
Collision with vessel	6	13.3	11.8
Injury onboard	6	13.3 ▲	3.7
Injury – towing incident	3	6.7 ▼	17.1
Collision with fixed object	3	6.7	10.7
Propeller injury	3	6.7	5.6
<i>Incident cause</i>			
Hazardous waters	4	8.9	7.2
Weather conditions	4	8.9	4.3
No proper lookout	3	6.7	11.5
Fault of equipment	3	6.7	2.9
<i>Vessel operation</i>			
Underway	35	77.8 ▲	55.6
Towing	5	11.1 ▼	22.2
At anchor, berthed or moored	4	8.9	6.7
<i>Vessel type/injured person's role</i>			
PWC	10 <sup>^</sup>	22.2 ▲	12.0
Open runabout	9	20.0 ▼	30.7
Towed person	7	15.6 ▼	26.2
Sail vessel (yacht)	5	11.1	5.1
<i>Time of day</i>			
10:00am – 1:59pm	18	40.0	31.8
2:00pm – 5:59pm	20	44.4	38.8
6:00pm – 11:59pm	4	8.9	13.1
<i>Month</i>			
October – March	34	75.6	71.4
April – September	11	24.4	28.6
<i>Waterway type</i>			
Enclosed waters (including alpine)	32	71.1 ▼	83.7
Open (ocean) waters	13	28.9 ▲	16.3

\* Not all descriptors recorded are shown, only those which accounted for at least 3 incidents in 2012-13. Descriptors are listed in the order they are discussed in the long-term incident report, *Boating Incidents in NSW – Statistical report for the 10-year period ended 30 June 2012*.

<sup>^</sup> An additional incident, in which a swimmer was injured (i.e. descriptor recorded as “swimmer”), also involved a PWC.





## 6 Lifejacket wear

While a variety of factors (Section 5) are involved in the development and unfolding of a vessel incident, lifejacket wear is an over-arching factor in determining the outcome of a vessel incident, especially where persons end up in the water.

Of the 26 recreational boating fatalities recorded in 2012-13, 21 were related to person(s) being forced into the water – generally as a result of vessel capsize or falling overboard. These 21 victims (80.8% of the total – Table 5) are presumed to have drowned, a slightly higher proportion than for the previous 10 years (64.7%).

While the proportion of recreational boating fatalities attributed to drowning was relatively high in 2012-13, there is also some evidence that lifejacket wear rates amongst recreational boating drowning victims were higher in 2012-13 (19% – Table 5) than during the previous years (6.8%).

Of the four people who were presumed to have drowned in 2012-13 despite wearing a lifejacket, two are suspected to have suffered a heart condition, while another of the victims is believed to have been wearing an ill-fitting lifejacket. The situation with the fourth victim was unclear.

In 2012-13, 21 people are presumed to have drowned in boating accidents – 17 of whom should have been wearing a lifejacket under current laws.

**Table 5: Summary of recreational drowning and lifejacket wear statistics for 2012-13, with long-term statistics provided for comparison.**

Period	Total recreational boating fatalities	Fatalities presumed due to drowning		Drowning victims who were wearing a lifejacket	
		Number	%	Number	%
2012-13	26	21	80.8	4	19.0*
Previous 10 years (2002-03 to 2011-12)	136	88	64.7	6	6.8

\* The statistical confidence in concluding that the 2012-13 wear rate is actually an improvement on that of previous years is approximately 93%.

## 6 Lifejacket wear

Based on the recreational boating fatalities recorded in 2012-13, the current lifejacket laws provide a high level of risk mitigation: of the 21 people who are believed to have drowned, 17 (81.0%) were boating in circumstances where a lifejacket should have been worn under these laws. However, only 4 of these people were actually wearing a lifejacket – *meaning that as many as 13 lives could have possibly been saved had all these people been wearing a lifejacket in accordance with current requirements.*

There were no bar crossing fatalities in 2012-13, further strengthening the trend towards reduced bar crossing fatalities since the compulsory wearing of lifejackets (when crossing ocean bars) was introduced in October 2003. Since that time (till 30 June 2013), the annual number of bar crossing fatal incidents among both recreational and commercial vessels has declined significantly – falling by nearly 60% – from an average of approximately one per year to 0.4 per year. At the same time, the overall number of bar crossing incidents has remained about the same (17.4 per year before compulsory wear and 17.7 per year since – an increase of less than 2%).







## 7 Commercial vessels

There were a total of 98 incidents recorded in 2012-13 involving a commercial vessel (Table 1). The vast majority of these incidents were relatively minor; 84 of the incidents (85.7%) resulted in either only minor injuries or no injuries. This proportion of minor incidents involving a commercial vessel was significantly greater than the corresponding proportion for incidents involving only recreational vessels (72.7%).

There were no fatalities aboard passenger vessels. Thirteen of the incidents (13.3%) resulted in serious injury, while a single incident (1.0%) resulted in a fatality, which was on a commercial fishing (Class 3) vessel. The proportion of serious injury and fatality incidents combined involving commercial vessels (14.3%) was significantly less than the corresponding proportion for incidents involving only recreational vessels (27.4%).

Most commercial vessel serious injury incidents in 2012-13 involved passenger and charter vessels, with a fairly even split between the larger 'Class 1' vessels (surveyed for more than 12 passengers) and the smaller 'Class 2' vessels (surveyed for 12 or less passengers). These vessels together accounted for 10 of the 11 commercial vessel serious injury incidents recorded in 2012-13 (i.e. 90.9%), and in this case, all of the vessels had some sort of passenger-carrying role (as opposed to a 'workboat' role). This is considerably greater than the corresponding proportion for 2002-03 to 2011-12, when passenger vessels, along with some 'workboats' together accounted for 76.7% of commercial vessel serious injury incidents.

There were no serious injury incidents involving commercial fishing (Class 3) vessels or smaller 'off the beach' Hire and Drive (Class 4) Vessels, and just one such incident involving a larger (i.e. surveyed) Hire and Drive Vessel.





## 8 Discussion and conclusions

The boating incident data for the 12 months ended 30 June 2013 points to some encouraging trends. Total incident rates for both recreational vessels and for commercial vessels continue to fall, and there is evidence of a long-term decline in commercial vessel fatal incident rates. In addition, the proportion of fatal incidents in the cooler months, when low water temperatures often exacerbate incident outcomes, was relatively low in comparison to previous years. There were also relatively few serious injury incidents relating to open runabouts or towing activities. Recent campaigns emphasising small boat safety and the “Know Before You Tow” safety package appear to have had some impact in reducing incident rates.

However, the number of recreational boating fatalities was the highest for many years, halting a long-term downward trend in fatality rates. In addition, a number of circumstances are evident for which the proportion of fatal incidents in 2012–13 was relatively high – early mornings, paddle and rowing craft, vessel capsize and the warmer months of the year. The result for paddle and rowing craft, coupled with the increasing popularity of these vessels, points to an emerging area of concern. The Maritime Management Centre, along with the Maritime Division of Roads and Maritime Services, have moved to address this concern with the recent release of the “Paddle Safe” education package.

In terms of serious injuries, the incident data for the year highlights a number of circumstances of concern, including onboard injuries, falling overboard, PWC use and boating in open waters. PWC have been an ongoing concern, and the incident statistics for these vessels are examined in detail in a separate report, *Personal Watercraft Incidents, Compliance and Feedback in New South Wales – Statistical report for the 10-year period ended 30 June 2012*. The latest incident data for PWC highlight the need for a continued focus on education and compliance work in relation to these vessels. The placement of additional emphasis on preventing onboard injuries and people falling overboard should also be considered when framing future boating safety education.

While the number of fatalities was considerably higher in 2012–13 than in the previous year, this increase has not been mirrored by similar increases in serious injuries or total incidents, which have, in fact, remained about the same. This suggests that the underlying safety risk associated with boating as a whole has not suddenly changed. Indeed, the long term decline in total incidents for both recreational and commercial vessels suggests a continuing gradual improvement in boating safety risk. Boating fatalities, due to their inherent volatility, are likely to be a poorer statistical indicator of overall safety risk than the far more numerous non-fatal incidents that occur on the state’s waterways.



Above all, the boating incident data highlights the urgent need to improve lifejacket wear rates on recreational vessels. While the 2012-13 data provides encouraging signs that the life jacket wear rate among drowning victims has begun to improve (up from less than 1 in 10 to nearly 1 in 5), the fact remains that fewer than 20% of drowning victims in 2012-13 were wearing a lifejacket. This figure, in conjunction with the high proportion of those killed who are presumed to have drowned, means it is possible that half the lives lost in recreational boating accidents in 2012-13 could have been saved if all of the people involved were wearing a lifejacket.

The commercial vessel statistics for 2012-13 confirm the overall safety of these vessels, particularly the larger passenger vessels such as ferries – which, it must be remembered, are heavily used and carry large numbers of people. Commercial vessels are typically affected by a high proportion of relatively minor incidents, such as low-speed collisions and injuries such as trips and falls among passengers. The requirement for Safety Management Systems on these vessels helps to reduce the risk of incidents, and the seriousness of incidents that do occur.

While a variety of issues remain a concern in terms of boating safety, evidence suggests that improved lifejacket wear rates are the key to reducing fatality rates. To this end, a major lifejacket education and compliance campaign is planned for the summer of 2013-14.



