2004

Marine Incidents Annual Report

May 2005

Queensland Government

Maritime Safety Queensland

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Published May 2005

Published by Maritime Safety Queensland

ISSN 1448-160X

Director-General's Foreword

It is encouraging to see Queensland's maritime safety outcome in 2004 maintaining the general trend of continuous improvement set over the past 25 years. While during 2004, marine incident fatalities were up on the number recorded in 2003, the overall marine safety outcome reinforces the benefits of the safety programs and initiatives set in place in recent years.

I mentioned last year that Queensland's population is growing at a faster rate than any other state in Australia. This trend continued in 2004. In the same period, vessel registration numbers and the associated on-water boating activity has continued to grow as have retail boat sales. In spite of this escalation in risk drivers, boating in Queensland is safer today than ever before.

Throughout 2004 Maritime Safety Queensland has worked at encouraging and fostering safety as a culture—as a core boating value within the commercial, fishing and recreational sectors of the boating industry and community. Such a task is not without its challenges, but it is worth pursuing. One has only to look to Australia's air safety record to appreciate the benefits of embracing a safety culture within the boating industry and community.

It is not just Maritime Safety Queensland which carries the responsibility for driving and maintaining Queensland's marine safety performance. It's a collaboration between a range of stakeholders and partners including port users, vessel manufacturers, the maritime training sector, commercial and recreational vessel operators, boating and fishing industry stakeholders, enforcement agencies, the insurance industry, educationalists, the media and others. The challenge for government, industry and the boating community lies in working together to ensure that boating is both safe and enjoyable and continues to meet Queensland's maritime transport, tourism and recreational needs.

The Marine Incidents Annual Report published by Maritime Safety Queensland is one of the tools available to maritime safety stakeholders to better understand why and how incidents occur on our waterways and to inform decisions about maritime safety initiatives and about individual boating behaviour.

As Director-General of Queensland Transport, I am pleased to formally report on Queensland's maritime safety performance in 2004. I want to take this opportunity to particularly thank Maritime Safety Queensland's partner agencies, the Queensland Water Police and the Queensland Boating and Fisheries Patrol for their assistance and support throughout 2004. I look forward in 2005 to the continued cooperation between Maritime Safety Queensland, commercial, fishing, and recreational boating communities and our partner agencies to further improve safety on our waterways.

Bruce Wilson
Director-General
Queensland Transport

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Year in review

According to the most recently available Australian Bureau of Statistics maritime fatality data, Queensland's maritime fatality rate per million of population has fallen over the period 2000 to 2003 by more than 31 per cent from 2.59 in 1995 – 1999 to 1.78 in 2000 – 2003. For the same period the overall Australian maritime fatality rate fell from 4.48 to 2.05 fatalities per million of population. Queensland was ranked sixth of the eight Australian jurisdictions in the period 1990-1994 and is ranked second overall in the period 2000 – 2003. Since 1996 Queensland's population has increased by an estimated 15 per cent and registered vessel numbers in Queensland increased by more than 45 per cent.

Despite a jump in the number of recorded marine incident fatalities and serious injuries in the 2004 calendar year, Queensland can nevertheless reasonably expect that its marine safety performance will continue the positive trend of the past 25 years. This expectation is based on Queensland's marine safety performance trend over a rolling five-year period.

By way of an annual snapshot, in 2004:

- There were 618 marine incidents reported in Queensland—a decrease of 4.2 per cent from 2003.
- The most frequently reported types of marine incidents were collisions between ships (127) and unintentional groundings (120).
- There were 43 incidents reported in 2004 that resulted in fatalities or serious injuries, which while representing an increase of 15 on 2003 figures, is well below the previous four-year average of 55.25 reported incidents.
- There were 12 fatalities resulting from these 43 incidents—a sizeable jump from the seven fatalities recorded in 2003. Despite the size of this increase in 2004, the fatality outcome is only marginally over-represented when compared with the previous four-year average of 10.25 fatalities per annum.
- Seven of the fatalities resulted from incidents involving commercial vessels, including four from commercial fishing vessel incidents. The remaining five fatalities, including three in one incident, resulted from incidents involving recreational vessels.
- Marine incident reports indicate that 37 persons suffered serious injuries requiring hospitalisation.
- Human factors were identified as contributing to 90 per cent of the incidents involving fatality or serious injury. Inattention was identified in 42 per cent of these more serious incidents.
- Recreational vessels accounted for 56.6 per cent of the vessels involved in fatal and serious injury incidents.
- While the most frequently involved vessels in fatal and serious injury incidents in 2004 were recreational jet skis (24.5 per cent), no fatalities resulted from jet ski incidents.

Even with the spike in marine incident fatalities in 2004 and the state's annual growth in both population and vessel ownership, Queensland's maritime fatality trend per million of population and per 100,000 registered vessels is flat-lining if not trending slightly downwards.

A series of profiles later in this report examine a number of these incident characteristics and attributes in more detail.

1. Introduction

1.1 Background

This report provides an account of the health of Queensland's maritime safety environment as reflected by the number and nature of reported marine incidents for the year 2004. The report is made in accordance with section 127 of the *Transport Operations (Marine Safety) Act 1994* (the Act).

The report and the data and investigative systems underpinning reported incidents together contribute to the following objectives outlined in section 3(2) of the Act:

(a) To allow the Government to have a strategic overview of marine safety and related marine operational issues; and

(b) To establish a system under which:

(i) Marine safety and related operational issues can be effectively planned and efficiently managed; and

(ii) Influence can be exercised over marine safety and related marine operational issues in a way that contributes to overall transport efficiency; and

(iii) Account is taken of the need to provide adequate levels of safety with an appropriate balance between safety and cost.

1.2 Marine incidents defined

Section 123(1) of the Act defines a marine incident as an event causing or involving -

(a) The loss of a person from a ship; or

(b) The death of, or grievous bodily harm to, a person caused by a ship's operations; or

(c) The loss or presumed loss or abandonment of a ship; or

(d) A collision with a ship; or

(e) The stranding of a ship; or

(f) Material damage to a ship; or

(g) Material damage caused by a ship's operations; or

(h) Danger to a person caused by a ship's operations; or

(i) Danger of serious damage to a ship; or

(j) Danger of serious damage to a structure caused by a ship's operations.

Consistent with the nationally endorsed data model for reporting marine incidents, a serious injury incident is defined as a marine incident where a person involved in the incident suffers any injury requiring admission to hospital.

1.3 Marine incident investigative and data systems

Section 125 of the Act requires marine incidents to be reported to Maritime Safety Queensland. All reported incidents are investigated—with more serious incidents undergoing more comprehensive investigation by trained and authorised shipping inspectors. Data from marine incident reports and subsequent investigation reports is recorded in a marine incident data management system. The data elements recorded are largely consistent with the national marine incident data set developed and endorsed by the National Marine Safety Committee. All Australian maritime jurisdictions are progressively moving toward full systems compliance with the national data set requirements.

Some incidents occurring in the maritime environment fall outside the earlier definition of a marine incident. These include workplace health and safety incidents that are not directly related to the operation of a vessel, and collisions involving international trading vessels that are covered for reporting and investigation purposes under the *Navigation Act 1912 (Cwealth)*. To present a fuller picture of safety management within the maritime environment in Queensland, Maritime Safety

Queensland maintains information on any such incidents involving a fatality that come to its attention. A review of out-of-scope fatal incidents is included in section 2.3.2 of this report.

1.4 Marine boards of inquiry

Under section 126 of the Act the Minister for Transport may on the recommendation of the chief executive, establish a board of inquiry into a reported marine incident. There were no boards of inquiry convened during 2004.

1.5 Structure of the report

As the report title implies, the focus is on marine incidents as a measure of maritime public safety. The report identifies the more significant incident categories and characteristics, and those showing significant change in 2004. This provides not only a sound basis for the determination of factors requiring further analysis, but also a sharper tool for shaping future maritime safety strategies.

The first section of the report includes a high-level Australian and interstate analysis and more detailed intrastate trend analyses. These analyses are made using both population and the size of the registered vessel fleet as surrogate measures of potential exposure to marine incidents. Detailed exposure data is not readily available for many aspects of commercial and recreational boating activity.

An examination is included of comparative regional performance within Queensland and of fatality and serious injury (FSI) incidents. These latter incidents carry a significantly higher social cost for the community.

Subsequent sections rank incident characteristics according to the extent of their involvement in incidents. This enables the identification of groupings of major incident characteristics and assessment of significant changes in the extent of their involvement in marine incidents over a five-year period.

The report then focuses on selected aspects of marine incidents for more detailed analysis. Interspersed among these selected profiles are a series of incident studies. These studies summarise marine incidents that actually occurred in Queensland in 2004. The reports highlight the lessons to be learnt from each incident. The cases presented here are representative only, and have been selected for the learning points that may benefit mariners confronted with similar circumstances.

To enable readers to gain further insight into marine incident trends and characteristics, time-series data for each characteristic of reported marine incidents are included at Appendix 1.

A review of the boating incidents and breakdowns reported by volunteer marine rescue organisations in 2004 is also included.

Regional volunteer marine rescue organisations perform an important role in the promotion and preservation of maritime safety in Queensland. They attend thousands of calls from boat operators for assistance each year and play a vital role in the practical handling of both marine incidents and boating breakdowns.

The aim in this and future reports is to accurately represent the major features of marine incidents in Queensland, to identify areas where safety performance has improved, and to pinpoint hotspots for subsequent management.

In reading this and previous years' reports, it should be noted that at any given time, data and/or case details relating to reported marine incidents might be outstanding or incomplete. Consequently, marine incident data for recent years is subject to updating in subsequent years' reports.

2. Marine incident trends

2.1 Australian marine fatality trends

To provide the broadest initial view of Queensland's relative maritime safety performance, the 2004 review commences with a comparison of Queensland's maritime fatality involvement per million of population with that of other Australian states and territories—based on Australian Bureau of Statistics (ABS) coroners' report data. While the ABS scope and definitions of water transport-related deaths may vary slightly from those used by Maritime Safety Queensland for fatal marine incidents, the ABS data nonetheless allows a nationwide comparison from a common point of reference. For example, the ABS data may include water transport deaths that do not meet the 'marine incident' definition which relates specifically to the operation of a vessel. ABS data also is based on the year that coroners' reports are registered, rather than the year in which an incident may have occurred, therefore making reconciliation of fatality numbers impossible.

The ABS data nonetheless resolves issues of comparability between individual jurisdictions' maritime incident data collections and definitions. Figure 1 shows that over the past 25 years, all states and territories in Australia have shown a marked improvement in maritime fatality rates per million of population. Table 1 at Appendix 1 provides comparative interstate water transport death rates for the period 1976 to 2003.

During the period 1994 to 1999, the data shows that the Queensland maritime fatality rate per capita exhibited both an absolute and a relative decrease compared with other jurisdictions. From ranking sixth of the eight jurisdictions in the 1990-94 period, Queensland's ranking improved to fourth over the period 1995-99. Queensland ranked second in Australia with a maritime fatality rate of 1.78 per one million of population for the period 2000 to 2003. This represents a fall of more than 31 per cent over the previous five-year average of 2.59 fatalities per million of population. Comparatively, the maritime fatality rate per million of population for all of Australia for 2000 to 2003 was 2.05. Coronial data for the 2004 calendar year was not available from the ABS at the time of printing this report.

Figure 1

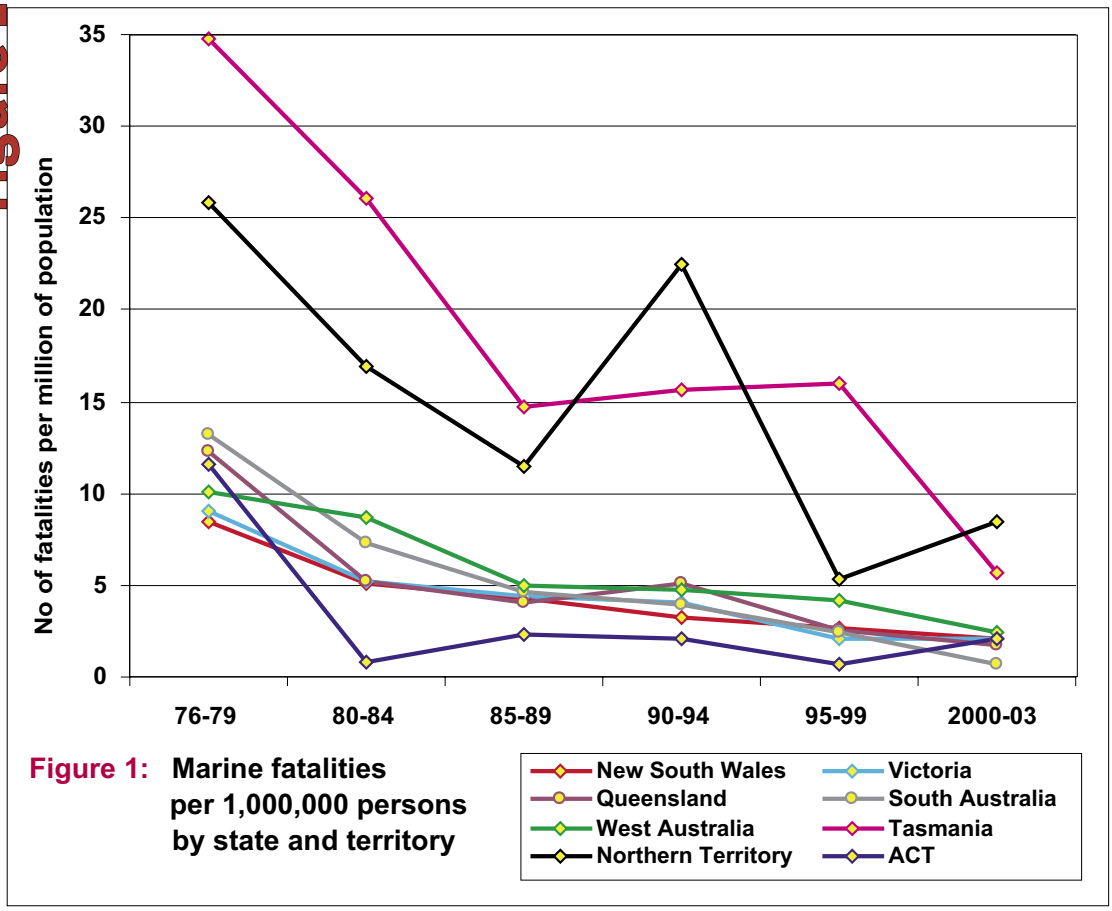


Figure 1: **Marine fatalities per 1,000,000 persons by state and territory**

Over the last three decades numerous marine safety initiatives have been introduced at both the national and state levels, including:

- Compulsory boating safety equipment (1976)
- Introduction of annual recreational boating safety education campaigns (1978)
- Formal training courses for commercial marine licensing (1980)
- Voluntary training courses for recreational boating (1985)
- On-water random breath testing (1989)
- Introduction of electronic positioning radio beacons (EPIRBs) (1992)
- Introduction of formal recreational boat licence training option (1993)
- Positive flotation for vessels (1996)
- Introduction of boating weather service (1998)
- Introduction of on-water speed detection devices (1999)
- Know, Know, Know Your Boat education campaign (2000)
- Boat Smart education campaign (2003-2004)
- Introduction of BoatSafe recreational boat licence training and assessment scheme (2004)
- Commencement of major commercial boating industry 'safety culture' program (2004)
- Torres Strait Boating and Alcohol Program (2004)

A number of specific recreational boating safety initiatives are presently being implemented in Queensland. These include:

- Extended recreational boat licensing requirements for displacement hull vessels
- A jet ski management plan including the introduction of mandatory jet ski licensing requirements
- Full implementation of the BoatSafe training and assessment scheme for recreational boat licensing

Extended recreational boat licensing requirements for displacement hull vessels – Previously the necessity to hold a recreational boat licence in Queensland depended on several factors relating to the vessel being operated, including the power of the vessel, the vessel's top speed and the vessel's hull type. From 1 September 2005, a recreational boat licence will be required to operate a vessel powered by an engine of greater than 4.5 kW (6 horsepower), regardless of the top speed of the vessel or its hull type. This new regulation means that many displacement hull vessels such as motor cruisers and larger sailing vessels will now require a licensed operator.

Jet ski management plan including the introduction of mandatory jet ski licensing requirements – Following a major review of jet ski operations in Queensland in 2004 and in recognition of the increasing involvement of jet skis in marine incidents, the government in late 2004 announced the implementation of a jet ski management plan. The plan includes a range of initiatives aimed at addressing and improving jet ski safety, noise and amenity concerns. From a safety perspective, mandatory jet ski licensing requirements will become effective from 1 January 2006, with a six month transition period commencing on 1 July 2005.

Full implementation of the BoatSafe training and assessment scheme for recreational boat licensing – A new competency-based training and assessment scheme for recreational boat licensing in Queensland was introduced on 1 July 2004. By 30 June 2005 the new scheme will completely supersede existing recreational boat licence training and testing arrangements. From 1 July 2005 all recreational boat licence applicants will need to formally demonstrate their boating competence by undertaking a full competency-based training and assessment program or seeking formal recognition of prior learning (RPL) through an approved BoatSafe training organisation. The BoatSafe scheme will also incorporate a mandatory jet ski training and assessment module to accommodate the earlier mentioned jet ski licensing requirements from 1 January 2006.

2.2 Marine incidents in Queensland

2.2.1 Introduction

The analyses included in this report draw on data from 'reported' marine incidents. While the overall level of reporting of marine incidents is considered robust, there is an acknowledged indeterminate level of underreporting of marine incidents in any given year. Maritime Safety Queensland continues to look for ways to improve incident reporting levels and is presently liaising with the marine insurance industry to explore opportunities for leveraging off the marine insurance claims process to improve marine incident reporting. A comprehensive set of tables showing time-series trends for reported marine incidents from 1999 to 2004 is provided at Appendix 1.

When disaggregated, incidents numbers are often small and random variations can be large. For this reason, Maritime Safety Queensland generally assesses marine incident trends in terms of their rate of occurrence in the year under review compared with the average of the previous four years of data.

2.2.2 Reported marine incidents

In 2004, 618 marine incidents were reported in Queensland. This represents a decrease of 27 from the 645 incidents reported in 2003. The number of incidents reported in 2004 is marginally below the trend in recent years and the previous four-year average of reported marine incidents.

2.2.3 Marine incidents by severity

This section examines all reported marine incidents in Queensland. Incidents are analysed from two perspectives:

- The severity of resultant personal injury (Figure 2), and
- The severity of resultant property damage (Figure 3)

Figure 2 shows that total reported marine incidents fell by a little over four per cent in 2004. The aggregate numbers of reported marine incidents in recent years suggest an annual baseline in the low-to-mid six-hundreds in terms of reported marine incidents. Analyses in subsequent years will continue to monitor this aspect.

Figure 2 also shows reported marine incidents according to the severity of the personal injury outcome. Incidents resulting in fatality have fallen from 12 in 2000 to 10 in 2004. This is in line with the previous four-year average of 9.25 fatality incidents per year. Reported serious injury incidents increased in 2004 to 33 compared with 21 in 2003, but still well below the previous four-year average of 46. This rise in 2004 can be attributed in part to increased vigilance in the reporting, capture and recording of information about marine incidents which involved serious injuries.

Figure 2

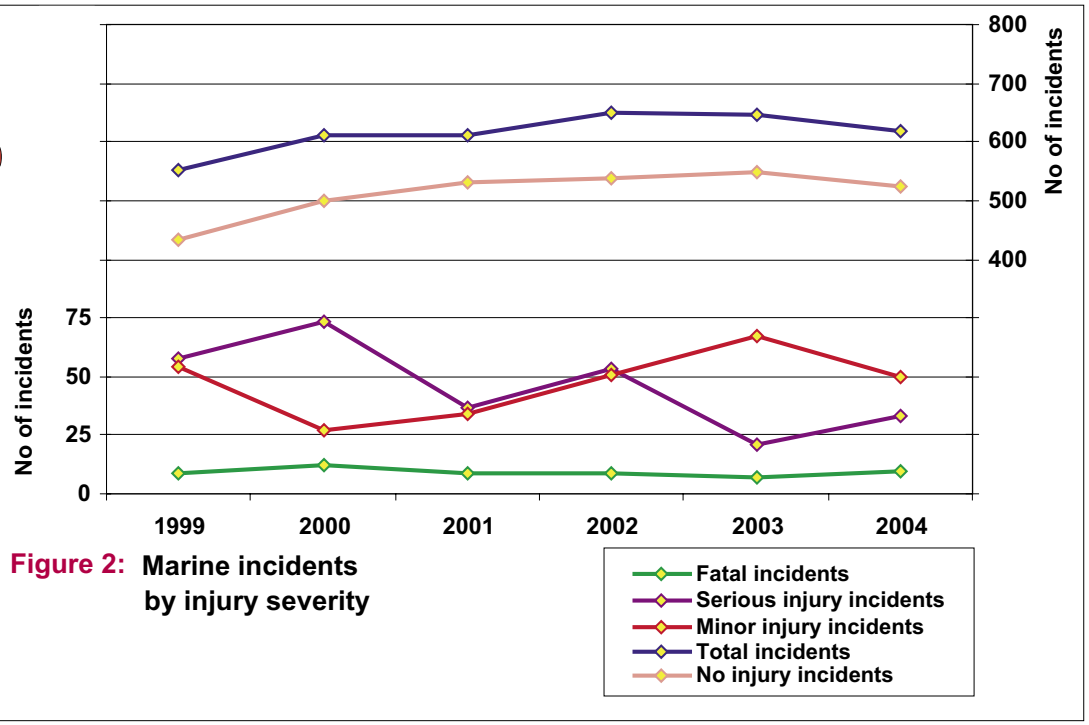


Figure 2: **Marine incidents by injury severity**

Incidents resulting in minor injuries have also been included in Figure 2. Minor injury incidents and the associated minor injuries appear to be generally consistent with recent trends – down on the number reported in 2003, but marginally up on the previous four-year average. The fall in the number of 'no injury' incidents has been offset by a rise in the number of serious injury incidents in 2004.

The second view of incident severity relates to property damage and loss. The various dimensions of property damage and their relative involvement in marine incidents between 1999 and 2004 are shown in Figure 3.

Figure 3

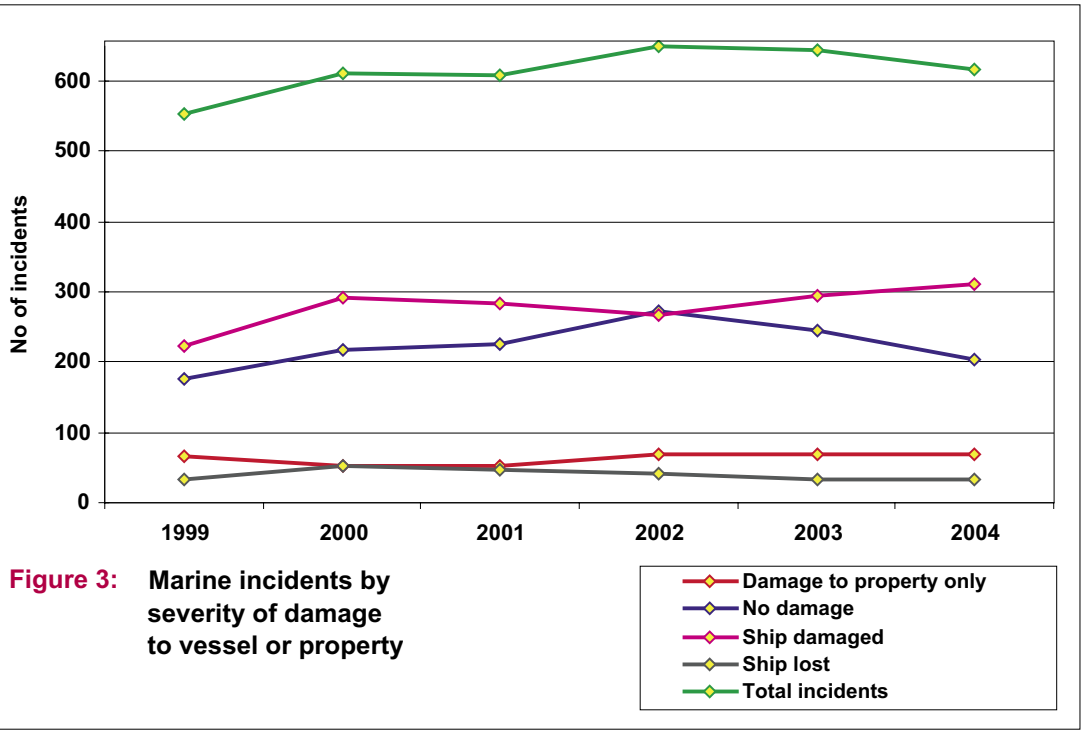


Figure 3: **Marine incidents by severity of damage to vessel or property**

The number of vessels deemed a total write-off/loss in terms of property damage (34) is up by one on the reported number of ships lost in 2003, but well below the previous four-year average of 42.75 ships lost per year. The number of ships damaged rose from 295 in 2003 to 309 in 2004, higher than the previous four-year average of 284.75. There was a corresponding fall in 2004 in the number of incidents where 'no damage' was reported.

2.2.4 Marine incidents by region

The Brisbane region recorded the greatest number of reported marine incidents (196) in 2004, while the Townsville region recorded the least number of reported incidents (44). Reported marine incidents in all regions are generally in line with their respective four-year averages. Figure 4 shows the number of reported marine incidents according to the region in which the incident occurred.

Map 1 shows spatially and by region where each of the reported marine incidents in 2004 occurred, together with the comparative numbers of commercially and recreationally registered ships for each region.

Figure 4

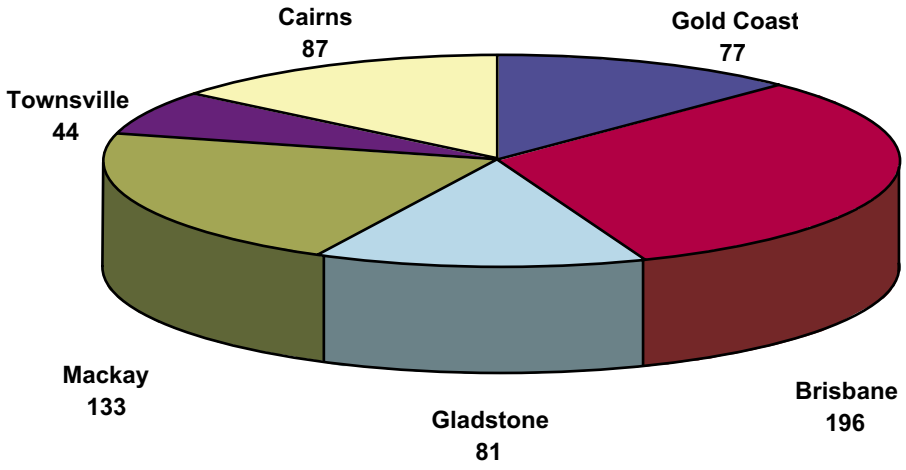
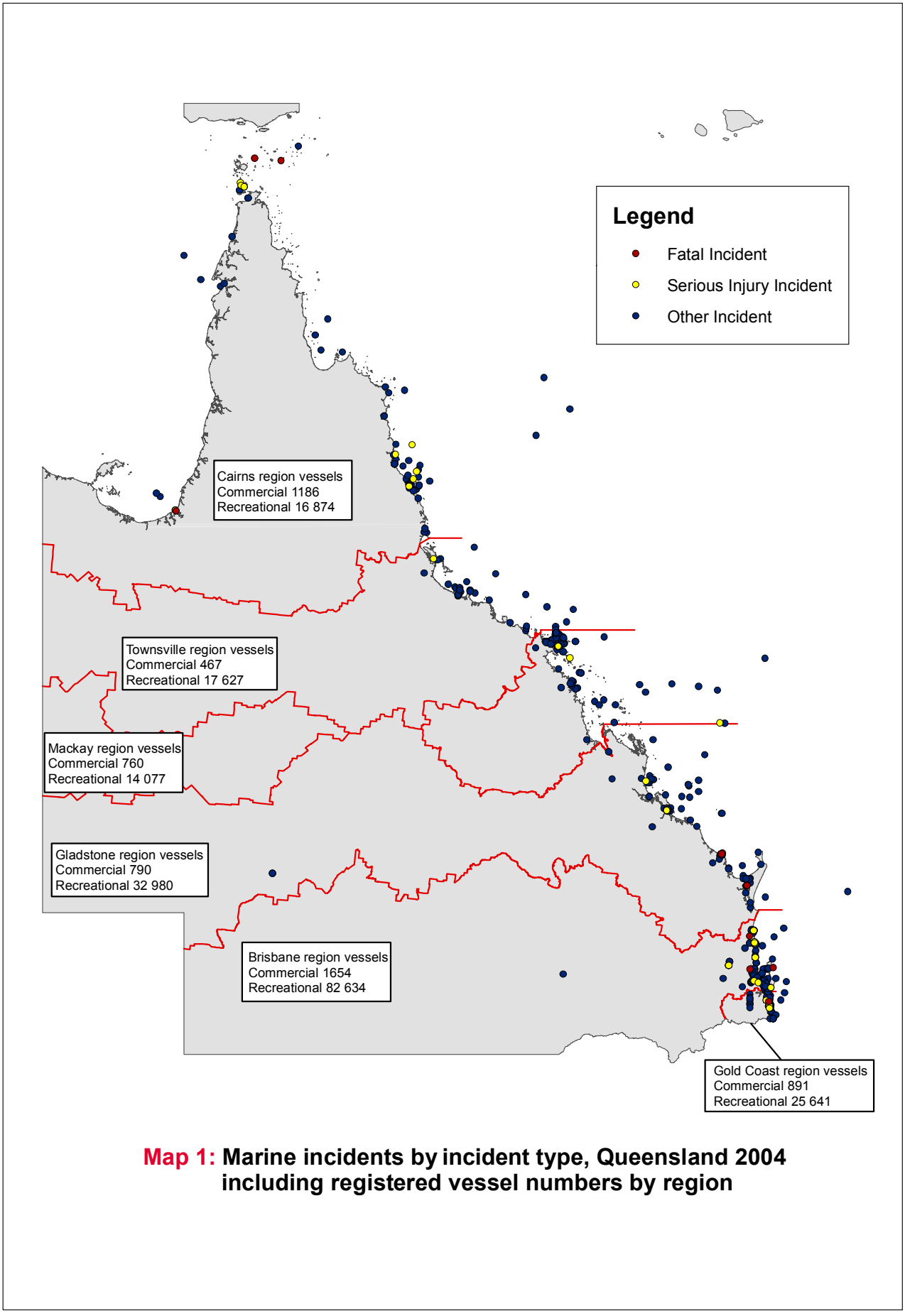


Figure 4: Marine incidents in 2004 - by region



Map 1: Marine incidents by incident type, Queensland 2004 including registered vessel numbers by region

2.2.5 Marine incidents by incident type

Figure 5 shows the trends for the five most frequently occurring types of marine incident reported in 2004. These five incident types accounted for 369 of the 618 recorded incidents in 2004.

Three of the top 5 incident types have shown increases in involvement in 2004.

The most frequent marine incident types in 2004 were 'collision between ships' and 'unintentional groundings', with 127 and 120 reported incidents respectively. 'Collisions between ships' are marginally over-represented in terms of their previous four-year average proportion of reported marine incidents. 'Unintentional groundings' are also marginally over-represented in reported marine incidents in 2004, despite a small decrease in the number of unintentional grounding incidents reported during the year.

Figure 5

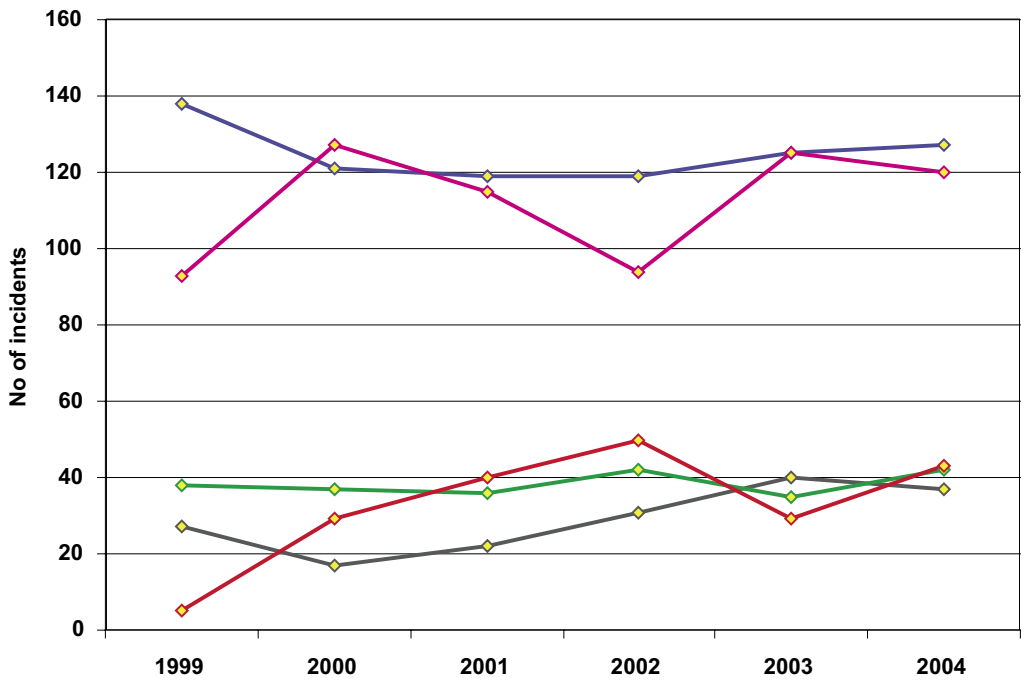


Figure 5: **Marine incidents by incident type (Top 5)**

2.2.6 Marine incidents by vessel type

Figure 6 shows the five vessel types that figured most frequently in reported marine incidents in Queensland in 2004 and their comparative representation since 1999. Four of the top five vessel types show decreases in their proportional involvement in marine incidents in 2004 compared to 2003.

Commercial passenger vessels (122) are significantly under-represented when compared with their involvement in 2003 (145) and their previous four-year average involvement in 132.5 marine incidents. Recreational motorboats (79) are over-represented when compared with a previous four-year average involvement of 55.25 incidents.

In terms of recreational vessel involvement generally, recreational vessels make up a little over 36 per cent of all vessels involved in incidents. Recreational sailboats and recreational motorboats account for 56 per cent of these. It is worth noting that during 2004 operators were not required to be licensed to operate the majority of vessels falling into these latter two recreational vessel categories. New recreational licensing provisions requiring operators of any recreational vessel powered by an engine of more than 4.5kW will come into effect from 1 September 2005.

Figure 6

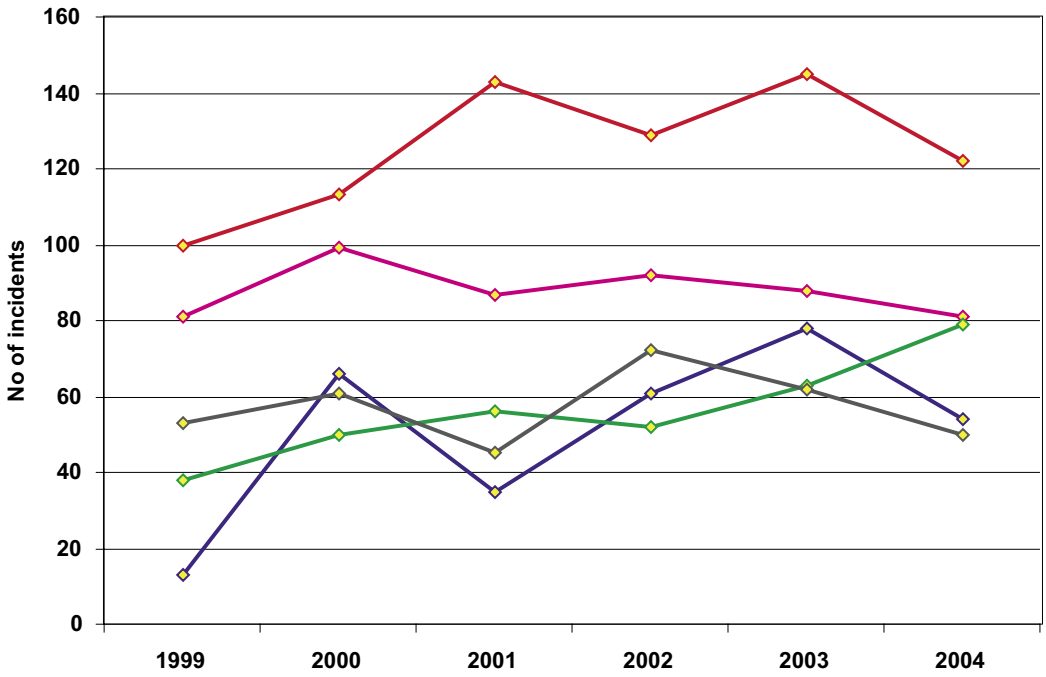


Figure 6: **Marine incidents by vessel type (Top 5)**

2.2.7 Marine incidents by location

271 (43.8 per cent) of the 618 reported marine incidents in 2004 occurred within smooth water limits. This compares with 244 incidents in smooth waters in 2004 and a previous four-year average involvement of 241.25. Incidents reported as occurring in the three remaining locations – partially smooth waters, offshore waters and inland waters showed decreases in both their absolute and relative representation in 2004. Incidents occurring in partially smooth waters (153) decreased by more than 35 per cent on the 190 partially smooth water incidents reported in 2003. Inland water incidents (71) also fell again in 2004. This could be due in part to more rigorous application of the location definition for incidents occurring in non-tidal streams, impoundments and catchments. It could also be the result of impoundment closures due to low water levels. A number of major inland impoundments were closed to boating during 2004. Figure 7 shows reported marine incidents in 2004 according to the location in which they occurred.

Figure 7

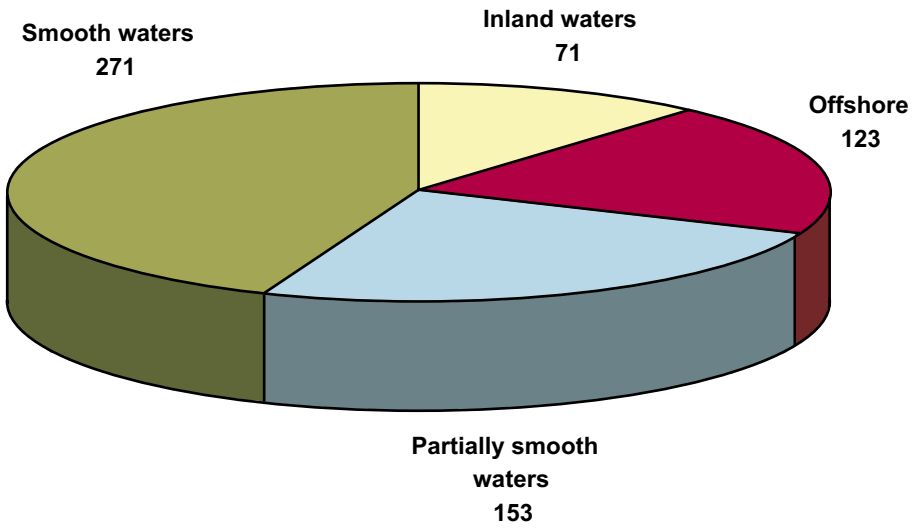


Figure 7: Marine incidents in 2004 - by location

The location descriptors used for recording marine incidents in Queensland are defined below:

- Inland waters – any navigable water that is not tidal, for example, non-tidal rivers, creeks, lakes and dams
- Smooth waters – any enclosed navigable tidal water other than waters defined by legislation as partially smooth waters, for example, tidal creeks, rivers, estuaries, harbours and bays
- Partially smooth waters – open stretches of water defined by legislation as partially smooth waters where wave heights under normal conditions do not exceed 1.5 metres, for example, open sections of Moreton and Hervey Bays
- Offshore waters – those waters that are beyond smooth and partially smooth waters including exposed coastal waters.

2.3 Queensland marine fatality trends

Figure 8 shows Queensland's maritime fatalities per million of population and per 100,000 registered vessels. In the absence of more definitive exposure data, these represent two surrogate but objective measures of exposure for maritime fatalities. Fatality rates relative to both vessels on register and total population rose in 2004 going against the recent downward trends.

Figure 8

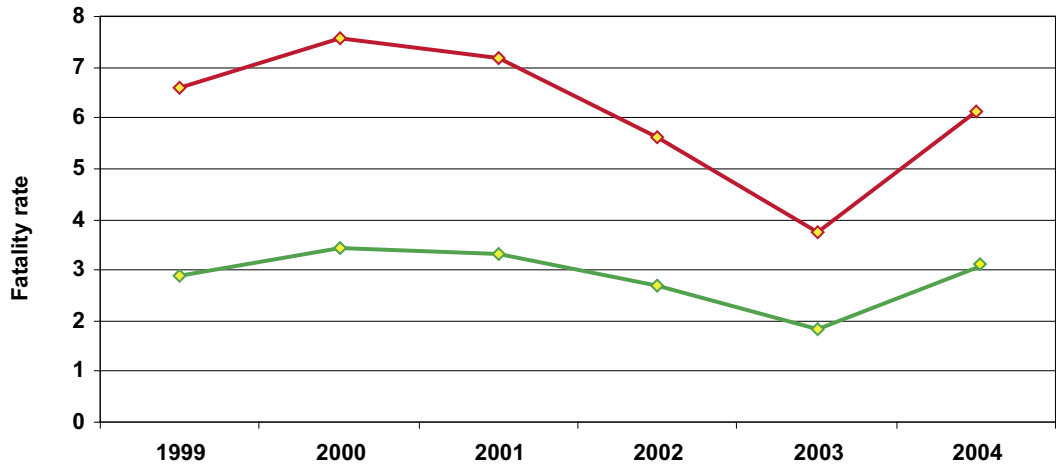


Figure 8: **Fatalities per 100,000 registered vessels and fatalities per million of population by year**

Figure 9 compares trends in Queensland marine fatalities with both vessel registration and population trends since 1997 (index 1997 = 100). Despite a rise in marine incident fatalities in 2004 (12 compared with 7 in 2003), the annual fatality trend since 1997 has been flat-lining. Over the same period, Queensland's vessel registration numbers have grown by more than 44.5 percent and its population has increased by more than 16.5 per cent.

Figure 9

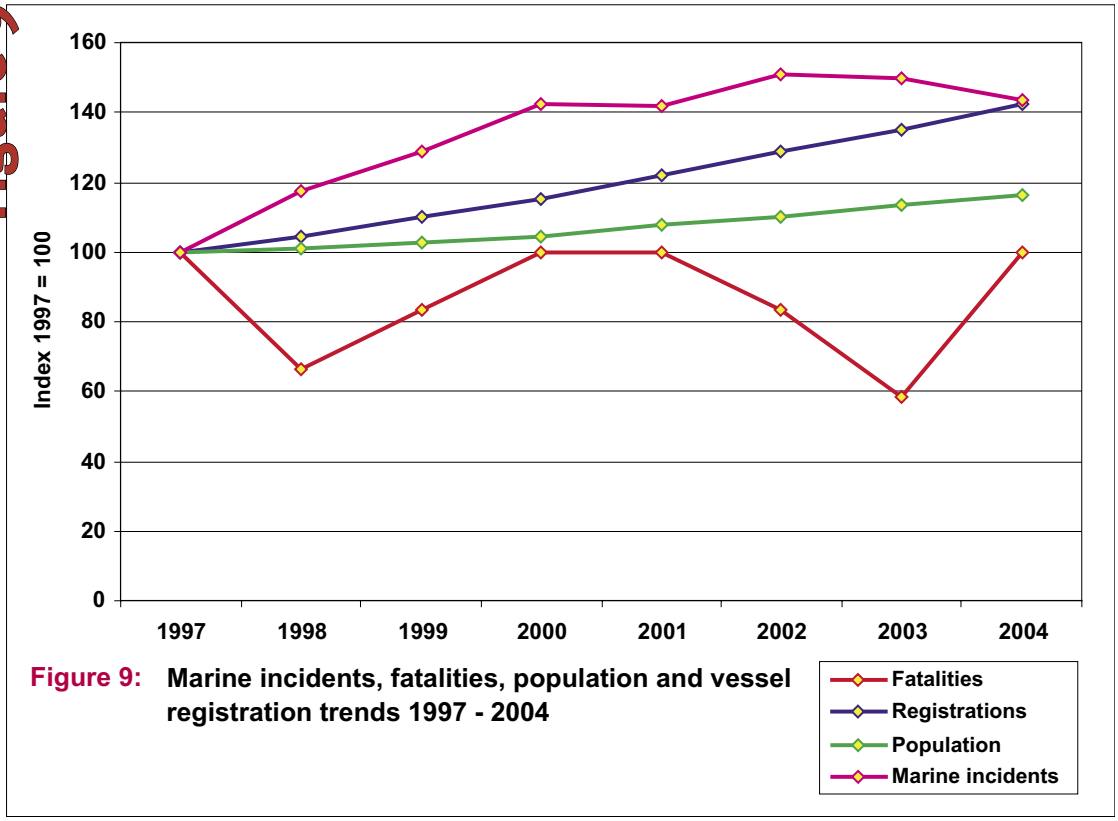


Figure 9: **Marine incidents, fatalities, population and vessel registration trends 1997 - 2004**

2.3.1 Marine fatalities by vessel type

In Figures 10 and 11, marine incident fatality figures are broken down according to the two major vessel registration categories—recreational and commercial.

Figure 10 shows that five fatalities resulted from marine incidents involving recreational vessels in 2004, the same number as in 2003 and below the previous four-year average of 6.25 fatalities per annum. This compares with growth in registered recreational vessel numbers in 2004 of 5.28 per cent and 45 per cent over the period 1997 to 2004. Despite increasing numbers of recreational vessels on the waters and increasing levels of recreational boating activity, the fatality rate per 1,000 registered recreational vessels continues to fall.

Figure 10

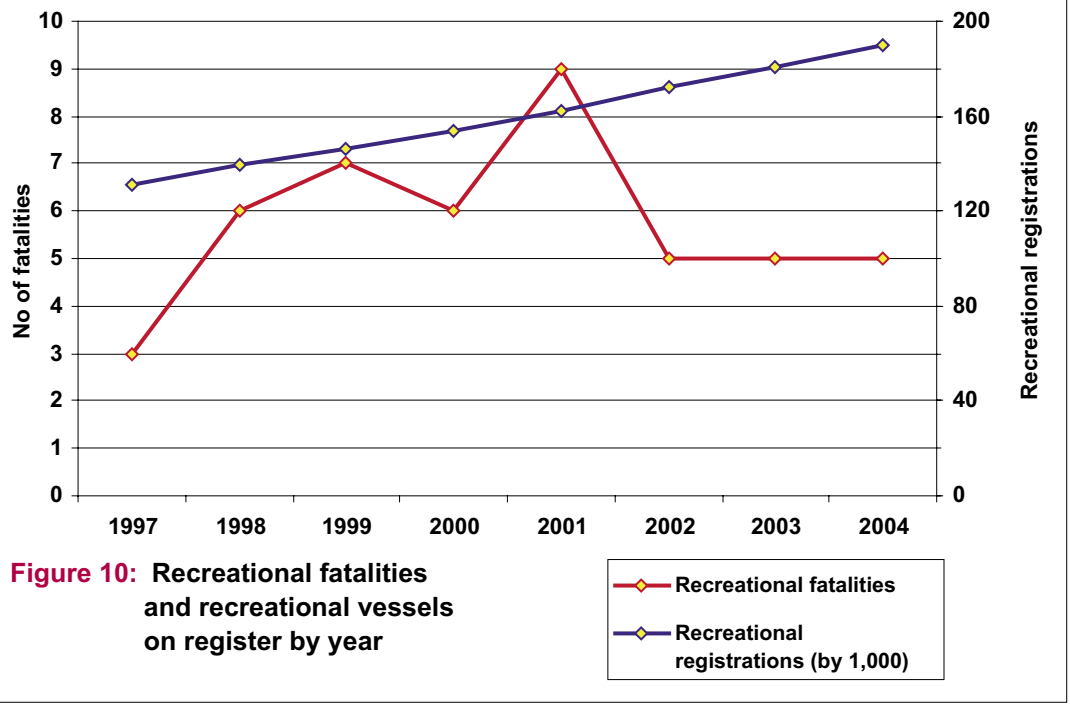


Figure 10: Recreational fatalities and recreational vessels on register by year

The growth trend in the number of commercially registered vessels is shown in Figure 11. There has been an increase in the number of commercially registered vessels of approximately 24.8 per cent over the period 1997 to 2004. Figure 11 shows there were seven fatalities resulting from marine incidents involving commercial vessels in 2004. This represents a significant rise from the two commercial vessel fatalities recorded in 2003 and is well above the average of four commercial vessel fatalities per year for the previous four-year period. Four of the seven recorded commercial vessel fatalities in 2004 resulted from incidents involving commercial fishing vessels.

Figure 11

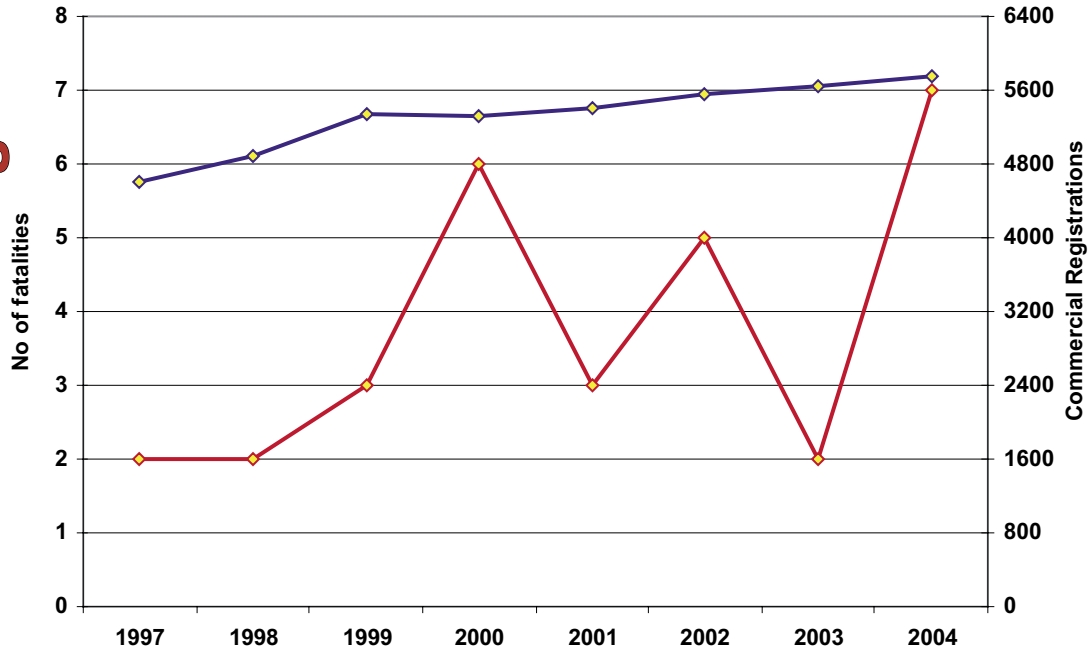


Figure 11: **Commercial fatalities and commercial vessels on register by year**

2.3.2 Out-of-scope marine fatalities

For a number of years Maritime Safety Queensland has captured data on incidents which occur in the maritime environment but are outside the scope of marine incidents as defined in the Act. They include fatality incidents where the death is attributable to natural causes, where the incidents fall directly within the scope of Queensland workplace health and safety or other Commonwealth legislation, or where the incident is not clearly connected with or attributable to the operation of a vessel.

As part of its marine incident case management system, Maritime Safety Queensland monitors these incidents to ensure that any remedial action, including possible legislative changes, is taken. The data also enables the presentation of a fuller picture of safety in the maritime environment.

Figure 12 shows the number of fatalities resulting from both in-scope and out-of-scope incidents in the maritime environment for the period 2000 to 2004. Queensland's combined maritime fatalities, including out-of-scope fatalities, were 23 in 2000, 19 in 2001, 17 in 2002, 16 in 2003 and 18 in 2004. Out-of-scope maritime fatality data was not recorded before 2000.

The 2004 fatalities classified as out-of-scope included:

- Three males who died while scuba diving
- A female who suffered medical complications following a fall on a houseboat
- A male who died from a suspected heart attack while fishing alone
- A male international tourist who died while snorkelling with a Whitsunday tourist group

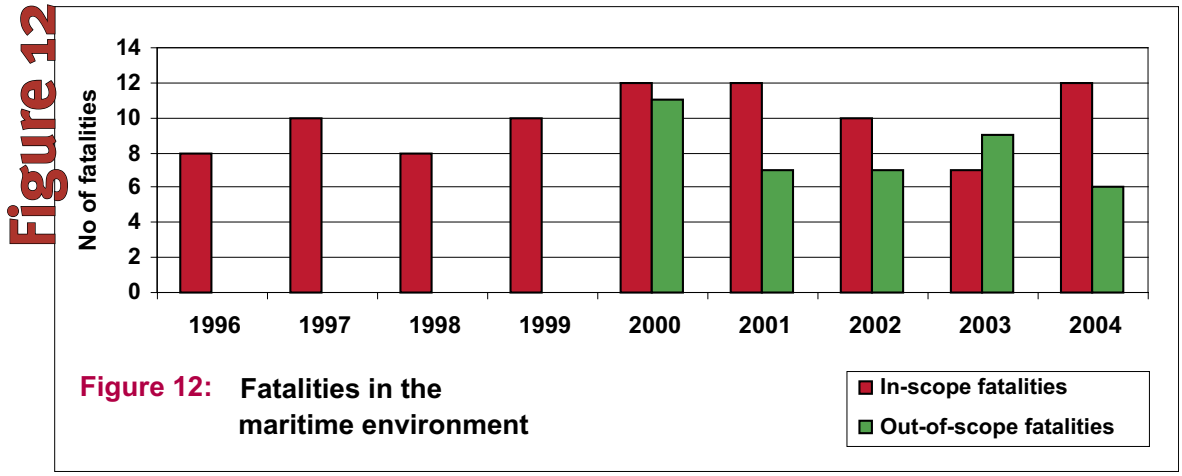


Figure 12: **Fatalities in the maritime environment**

2.4 Fatal and serious marine incidents in Queensland

The following sections examine marine incidents resulting in fatalities and serious injuries (FSI incidents).

2.4.1 Reported fatal and serious injury incidents

In 2004, Maritime Safety Queensland received reports of 43 FSI incidents – 15 more than in 2003. Despite the increase in the number of reported FSI incidents, this outcome is significantly below the previous four-year average of 55.25 FSI incidents per year.

Based on recent independent studies of hospital admissions data which suggest a higher level of serious injuries from 'water transport' accidents, it is acknowledged that there is likely to be an indeterminate level of under-reporting of non-fatal marine incidents. Maritime Safety Queensland is examining options for monitoring both Australian and Queensland hospital admissions data to more accurately determine the extent of serious injuries resulting from marine incidents.

There were 12 fatalities resulting from marine incidents during 2004—five more than in 2003. This represents a significant increase over the number of fatalities recorded in 2003. Despite the rise in recorded fatalities in 2004, the fatality outcome is only marginally higher than the previous four-year average of 10.25 fatalities per annum.

2.4.2 FSI incidents by region

Figure 13 shows the number of FSI incidents reported in each region during 2004.

In 2004 five regions recorded FSI incident numbers below their respective previous four-year averages for FSI incidents. Cairns region recorded a sizeable increase in the number of recorded FSI incidents – with 12 recorded FSI incidents in 2004, up from 0 in 2003 and over-represented when compared with the region's previous four-year regional average of 6.75 FSI incidents.

When compared with 2003, Gold Coast, Brisbane and Gladstone regions each recorded increases in the number of FSI incidents in 2004. Despite these increases, all three regions are still below their respective previous four-year averages for FSI incidents.

The Brisbane region, with 13 recorded FSI incidents is well up on its 2003 result of seven FSI incidents, but well below the region's previous four-year average of 18.25 FSI incidents. While the Brisbane region has a liitle over 43 per cent of the state's registered vessel fleet, the 13 FSI incidents reported for the Brsibane region represent a little over 30 per cent of the total reported FSI incidents in 2004. The 13 incidents resulted in two fatalities and 12 persons seriously injured. Of the 13 FSI incidents, nine were recreational vessel incidents including three speedboat incidents and three jet ski incidents, and four were commercial vessel incidents, of which three were commercial fishing vessel incidents.

Cairns region recorded the next highest number of reported FSI incidents in 2004. The 12 recorded FSI incidents in Cairns resulted in five fatalities and nine persons seriously injured. While Cairns

region has a little over nine per cent of the state's registered vessel fleet, the 12 recorded FSI incidents represent approximately 28 per cent of the total FSI incidents in Queensland in 2004. Unlike Brisbane region, the Cairns region FSI incidents were predominantly commercial vessel related with eight commercial vessel incidents and four recreational vessel incidents reported.

The other region to record a significant number of FSI incidents in 2004 was the Gold Coast region. With nine recorded FSI incidents (21 per cent of the state's FSI incidents), the region is over-represented when compared with its proportion of the state's vessel fleet (13.5 per cent). The mix of FSI incidents included six recreational vessel incidents and three commercial vessel incidents. These incidents resulted in two fatalities and nine serious injuries.

Mackay and Townsville regions, with two and one recorded FSI incidents respectively in 2004, have maintained their downward trend in the number of recorded FSI incidents over the past five years.

Figure 13

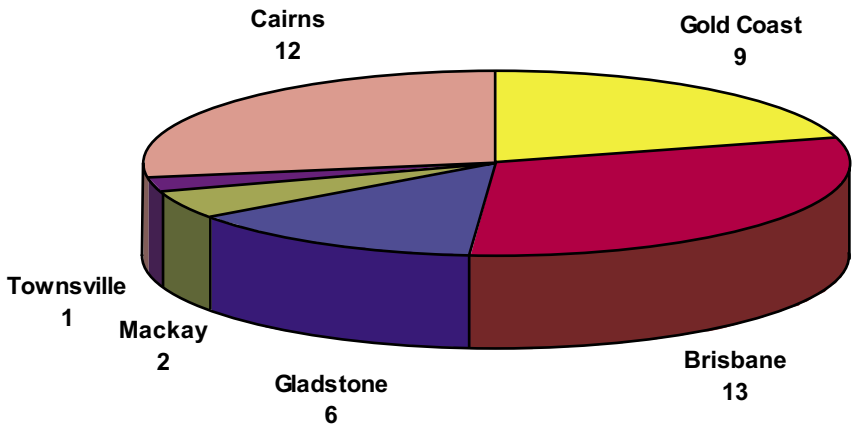


Figure 13: Fatal and serious injury incidents in 2004 - by region

2.4.3 FSI incidents by incident type

Figure 14 shows the trend over the past five years for the five most frequently-occurring types of marine incident that resulted in either fatalities or serious injuries in 2004. These five incident types accounted for 24 (55.8 per cent) of the 43 recorded FSI incidents in 2004.

Three of the top 5 incident types have shown increases in involvement in 2004. The two remaining top 5 FSI incident types had the same number of FSI incidents reported in 2004 as in 2003.

The most frequently-occurring FSI incident types in 2004 were 'person overboard' and 'collision between ships', each with six incidents reported. These 12 incidents resulted in four fatalities and ten serious injuries. There were 18 'person overboard' incidents reported in 2004, six of which resulted in three fatalities and three serious injuries. While marginally under-represented when compared with their previous four-year average FSI involvement (8.5), the 2004 outcome from these incidents confirms an historical pattern which suggests a higher probability that these incidents will result in death or serious injury.

FSI incidents involving 'collisions between ships' were up from three in 2003 to six in 2004— marginally above their previous four-year average FSI incident involvement of 5.75. These six incidents resulted in one fatality and seven serious injuries. Four of the six collision incidents involved recreational jet skis. These four incidents resulted in six persons being hospitalised with serious injuries. The single fatality resulted from a high speed collision between a commercial passenger vessel (water taxi) and a recreational motorboat.

Figure 14

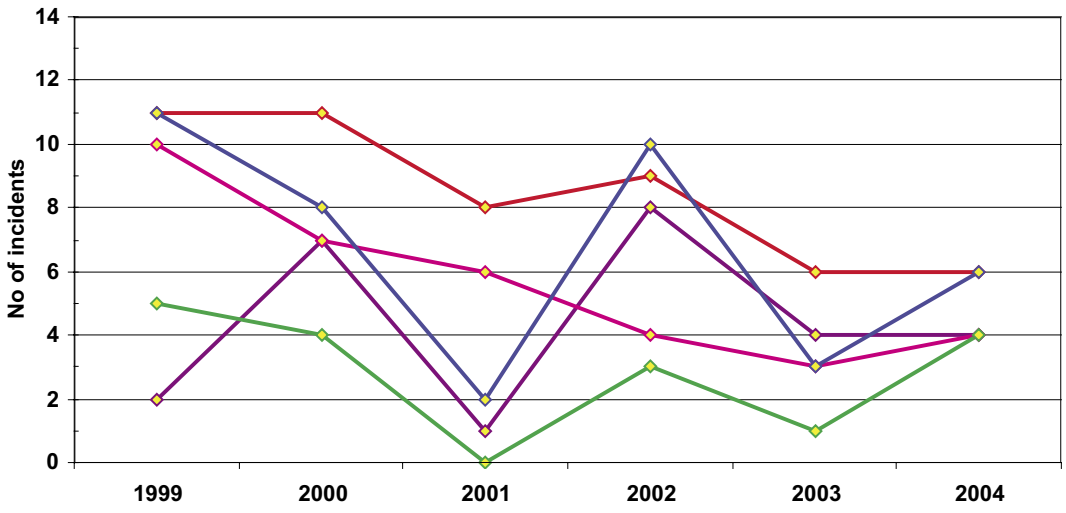


Figure 14: **Fatal and serious injury incidents by incident type (Top 5)**

2.4.4 FSI incidents by vessel type and length

Figure 15 shows the five vessel types that figured most frequently in FSI incidents in Queensland in 2004 and their comparative representation since 1999. Three of the vessel types have shown increases in FSI incident involvement in 2004—recreational jet skis, commercial fishing ships and recreational motorboats.

The 11 remaining FSI incidents comprised nine different vessel types including three commercial (hire and drive) vessels, two commercial non-passenger vessels and two recreational sailing boats.

The number of FSI incidents in 2004 involving commercial fishing ships (7) is up significantly on the two such incidents reported in 2003. The 2004 result is in line with the previous four-year average involvement. The seven reported commercial fishing ship incidents resulted in four fatalities and three serious injuries.

There was a 20 per cent fall in recreational speedboat incident numbers in 2004 and a corresponding fall in the number of recreational speedboat incidents that resulted in fatality or serious injury – eight FSI incidents, down from 10 in 2003. The eight reported recreational speedboat incidents resulted in four fatalities and seven serious injuries.

Recreational PWC (jet skis) showed a significant increase in involvement in FSI incidents in 2004. There were eight reported recreational jet ski incidents that resulted in ten persons being seriously injured in 2004. This compares with one such incident in 2003. Despite the increase in involvement of recreational jet skis in FSI incidents in 2004, there has only ever been one jet ski-related incident fatality recorded in Queensland (in 2000).

Following a major review of jet ski operations in Queensland in 2004 and in recognition of increasing involvement of jet skis in serious marine incidents, a jet ski management plan was announced by the government in late 2004. The plan includes a range of initiatives aimed at addressing and improving jet ski safety, noise and amenity concerns. From a safety perspective, new mandatory jet ski licensing requirements will become effective from 1 January 2006, with a six month transition period from 1 July 2005.

The same number of FSI incidents involving commercial passenger vessels (5) was recorded in 2004 as in 2003. Proportionately, commercial passenger vessel representation in FSI incidents has fallen – from 17.8 per cent in 2003 to 11.6 per cent in 2004.

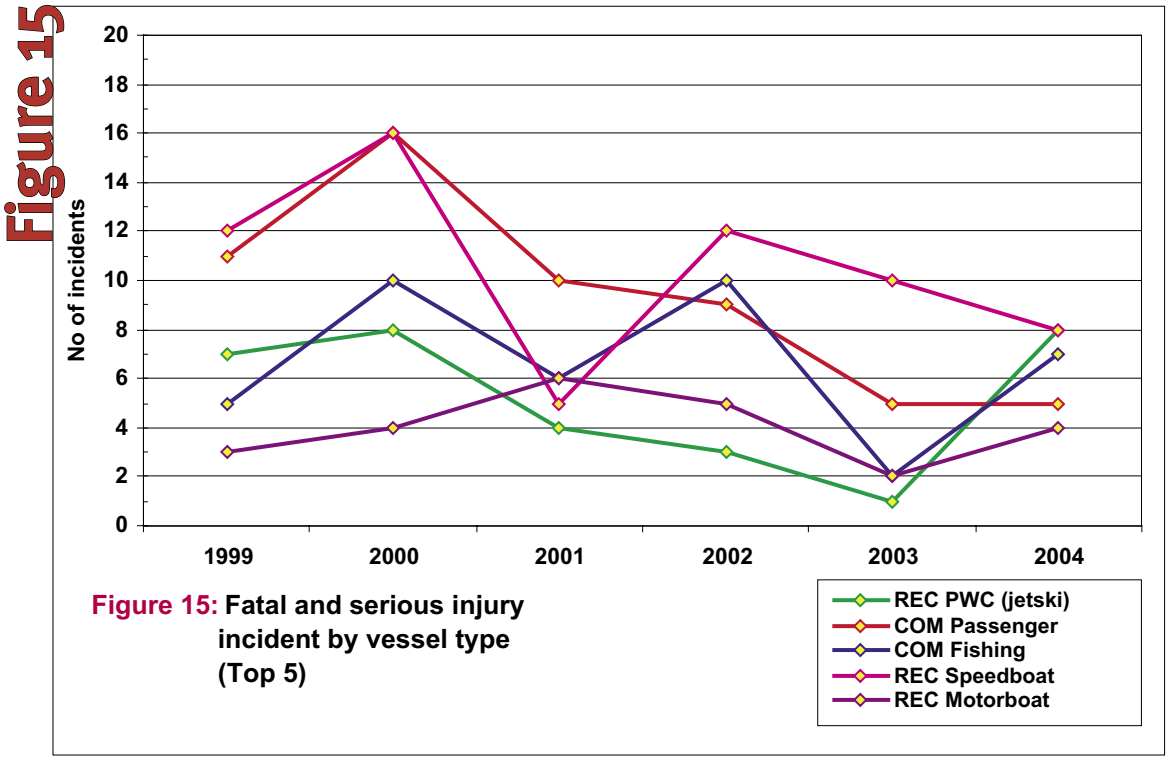


Figure 15: Fatal and serious injury incident by vessel type (Top 5)

Of the 50 vessels involved in the 43 FSI incidents in 2004, 33 (66 per cent) were under eight metres in length. 22 of these were recreational vessels and 11 were commercially registered vessels. Only five of the vessels involved in FSI incidents in 2004 were over 15 metres in length. Four were commercially registered and one was a recreationally registered sailing vessel. In terms of the incidents in 2004 that resulted in fatalities, there were ten vessels involved, six of which were less than 8 metres in length three were commercially registered and three were recreationally registered. The remaining four vessels were all commercially registered and ranged in length from 10 to 18 metres.

2.4.5 FSI incidents by location

Eighteen (41.9 per cent) of the 43 reported FSI incidents in 2004 occurred in smooth waters, three more than in 2003. A further sixteen (37.2 per cent) of the reported FSI incidents in 2004 occurred in offshore waters. Only seven per cent of FSI incidents in 2004 occurred in inland waters.

There were eight fatalities and 11 serious injuries that resulted from the 16 offshore FSI incidents compared with three fatalities and 17 serious injuries from the 18 FSI incidents in smooth waters. This reinforces that the outcome is likely to be more serious for incidents occurring in offshore waters.

Figure 16 shows the location of reported FSI incidents in 2004.

Figure 16

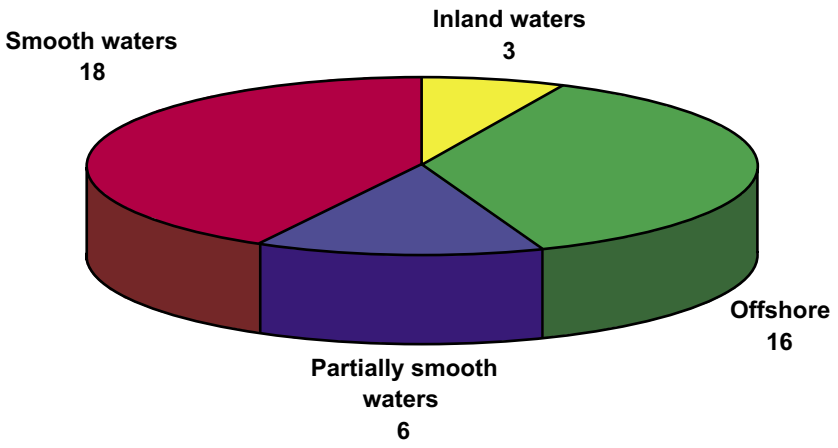


Figure 16: Fatal and serious injury incidents in 2004 - by location

2.4.6 FSI incidents—incident characteristics by extent of involvement

This section analyses FSI incidents in 2004 to determine the extent to which individual incident characteristics such as human contributing factors, weather conditions and vessel type were involved in these more serious incidents. The analysis, which focuses on the thirty most frequently occurring characteristics in FSI incidents, measures:

- The number of times each characteristic was reported or identified during investigation as being involved in a FSI incident, and
- Changes in the extent of involvement of these characteristics in 2004 compared with their average rate of involvement in FSI incidents in the previous four-year period

Figure 17 shows the extent of involvement in 2004 for the 'top 30' incident characteristics together with their average rate of involvement over the previous four-year period. Despite an increase in the number of FSI incidents reported in 2004, the majority of the 30 most frequently occurring attributes are under-represented when compared with their previous four-year average involvement.

The most notably over-represented attribute in FSI incidents in 2004 was the involvement of the human contributing factor 'inattention'. When compared with the previous four-year average involvement, there has been a 30 per cent increase in the identification of inattention as a contributing factor to FSI incidents in 2004. Inattention was identified as contributing to 17 (39.5 per cent) of the 43 FSI incidents reported in 2004.

As has been the case in recent years, the most frequently occurring attributes of FSI incidents in 2004 related to ambient conditions including clear weather, good visibility and the daytime period. These factors characterise more than 50 per cent of the 43 FSI incidents in 2004.

Of the 43 incidents involving fatality or serious injury in 2004, 23 did not involve any physical damage to either the vessels involved or to other property.

There has also been an absolute and relative increase in 2004 in the numbers of FSI incidents occurring in offshore waters. In 2003, five of the 28 of the reported FSI incidents occurred in offshore waters. In 2004, there were 16 FSI incidents in offshore waters. These 16 incidents resulted in eight fatalities and 11 serious injuries. Offshore marine incidents are examined in more detail later in this report.

In 2004, the proportion of FSI incidents occurring in smooth waters decreased relative to the number of smooth water FSI incidents in 2003. There were 18 smooth water FSI incidents reported in 2004 – 41.9 per cent of all FSI incidents in 2004. This compares with 15 (53.6 per cent) smooth water FSI incidents in 2003. The previous four-year average number of smooth water FSI incidents was 17.5.

While in 2003, recreational speedboats were the most frequently involved vessel type in FSI incidents, recreational jet skis and commercial fishing vessels have assumed the mantle of most involved vessels in reported FSI incidents in 2004. There were 13 recreational jet skis involved in the 43 FSI incidents reported in 2004—significantly over-represented when compared with the one recreational jet ski involved in a FSI incident in 2003 and a previous four-year reported average FSI incident involvement in 4.75 FSI incidents.

There were also eight commercial fishing vessels involved in the 43 reported FSI incidents in 2004, compared with three in 2003 and a previous four-year reported average FSI incident involvement of 7.25. The eight commercial fishing vessels were involved in seven FSI incidents in 2004 resulting in four fatalities and three serious injuries. Commercial fishing vessels have consistently been among the most frequently involved vessels in FSI incidents, particularly those incidents involving fatalities. The involvement of commercial vessels and in particular, commercial fishing vessels in marine incidents is examined in more detail later in this report.

The most frequently occurring FSI incident type in 2004 was again 'person overboard'. Six such incidents were recorded in 2004, resulting in three fatalities and three serious injuries. These six incidents represent only 14 per cent of all FSI incidents reported in 2004, but account for 25 per cent of all fatalities and 8.1 per cent of all serious injuries recorded in 2004. Considering that less than three per cent of all reported marine incidents in 2004 were 'person overboard' incidents, it suggests that when 'person overboard' incidents occur, the outcome is likely to be severe—resulting in death or serious injury.

Figure 17

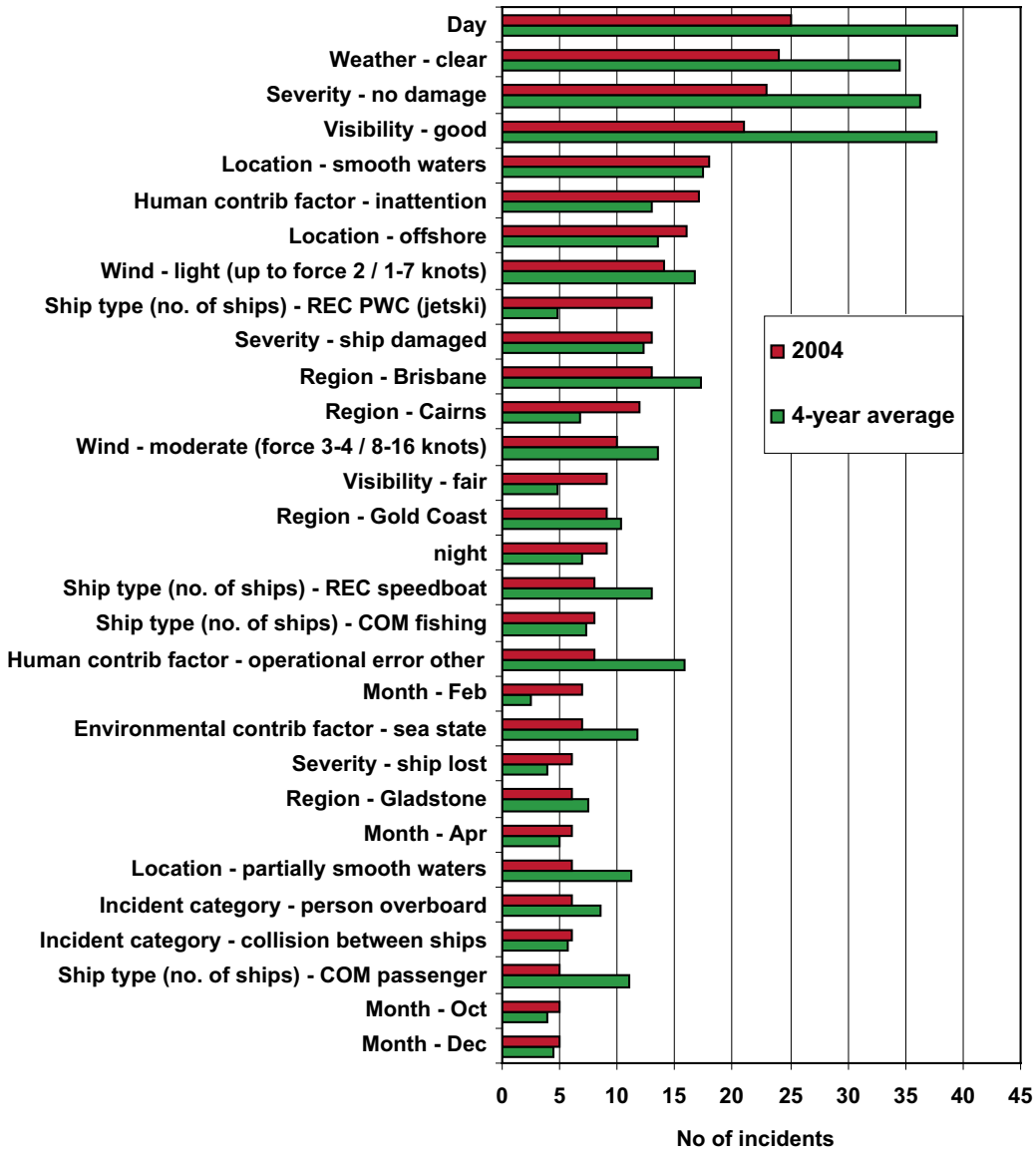


Figure 17: **Characteristics ranked by size of involvement in marine incidents resulting in fatalities and serious injuries - Queensland**

3. Selected marine incident profiles

3.1 Incidents involving recreational vessels

To provide a context for considering the involvement of recreational vessels in marine incidents, there were 189,833 recreational vessels registered in Queensland as at 31 December 2004, an increase of 5.28 per cent in the year compared with an increase in 2003 of 4.88 per cent and in line with the previous four-year average annual increase of 5.36 per cent. Recreational vessels represent 97 per cent of Queensland's total registered vessel fleet.

Recreational speedboats, that is, boats capable of planing, make up 84.35 per cent of all registered recreational vessels. It is also noted that while recreational personal water craft (jet skis) represent only 4.2 per cent of all registered recreational vessels, their numbers grew in 2004 by nearly 19 per cent compared with an overall increase in registered recreational vessel numbers of 5.28 per cent. Recreational sailing vessels make up approximately 3.25 per cent of all registered recreational vessels in Queensland. Recreational motorboats make up approximately 12.4 per cent of all registered recreational vessels in Queensland.

In 2004, recreational vessels were involved in 212 (34.3 per cent) of the 618 reported marine incidents in Queensland—up marginally on their four-year average involvement in 200.75 incidents. Figure 18 shows the relative involvement of the different types of recreational vessels in the 212 recreational marine incidents, together with their previous four-year average involvement in incidents.

Figure 18

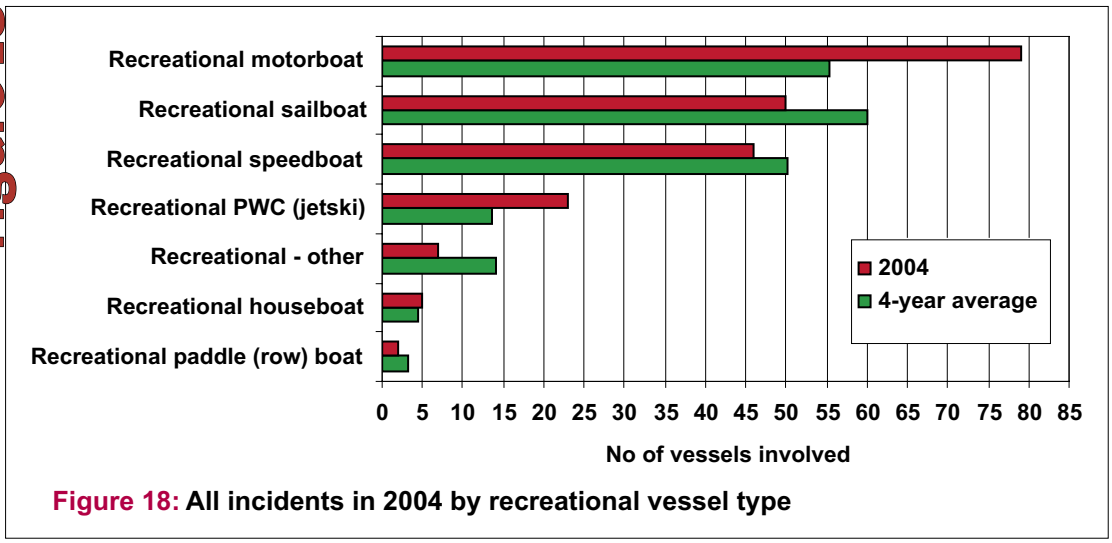


Figure 18: All incidents in 2004 by recreational vessel type

More than 60 per cent of the incidents involving recreational vessels occurred in the daytime, in clear weather and good visibility. Fifty seven per cent of the incidents resulted in the vessels being damaged. Approximately 45 per cent of the incidents occurred in smooth waters, 15 per cent in inland waters and the remaining 40 per cent in partially smooth and offshore waters. A little over 58 per cent of the reported recreational incidents occurred in the Brisbane and Gold Coast regions. This level of recreational vessel incident involvement in these two regions is in line with their 57+ per cent share of the state's registered recreational vessel fleet.

The number of recreational vessels lost in marine incidents in 2004 is also noteworthy. Figure 19 shows clearly the over-representation of recreational vessels in the 'ship lost' incident outcomes for 2004. Of the 34 vessels lost in all reported marine incidents in 2004, 24 (70.5 per cent) were recreational vessels – nine recreational sailing vessels, nine recreational speedboats, five recreational motorboats and one recreational jetski. The number of recreational vessels lost is nonetheless consistent with the previous four-year average of 23.75 recreational vessels lost. Recreational sailing vessels lost continue to be over-represented compared with the previous four-year average for lost sailing vessels.

Figure 19

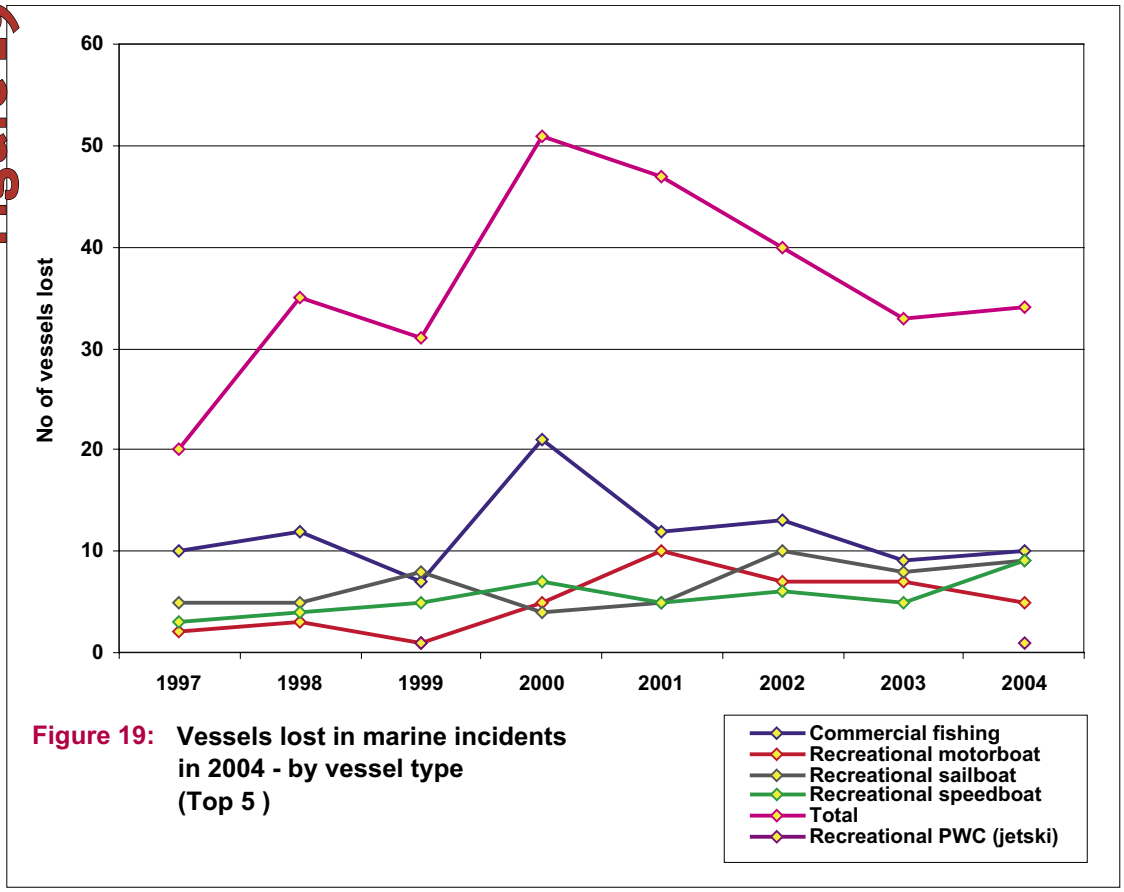


Figure 19: **Vessels lost in marine incidents in 2004 - by vessel type (Top 5)**

Recreational vessels were involved in 24 FSI incidents in 2004—55.8 per cent of all the reported FSI incidents in Queensland compared with 53.5 per cent in 2003. However, the number of recreational vessel FSI incidents was marginally under-represented when compared with the four-year average of 23.25 units of involvement. Recreational vessel incidents resulted in five (41.6 per cent) of the 12 marine incident fatalities recorded in 2004. Of the 37 serious injuries recorded in 2004, 25 (67.5 per cent) resulted from incidents involving recreational vessels.

Recreational speedboats and recreational jet skis were the two most involved classes of recreational vessel in FSI incidents in 2004. There were eight FSI incidents involving recreational speedboats, marginally under-represented when compared with their previous four-year average involvement of 10.75. Recreational speedboat incidents in 2004 resulted in four fatalities and seven serious injuries. There were eight FSI incidents involving recreational jet skis reported in 2004 resulting in ten serious injuries. The number of FSI incidents involving recreational jet skis was up in 2004 compared with the one incident reported in 2003 and a previous four-year average involvement in four FSI incidents per year.

Incident study 1

Lack of jet ski experience leads to serious injuries

The vessel: Recreational jet ski

The incident

A recreational jet ski was being ridden close to shore by an unlicensed rider. The rider was wearing an appropriate PFD and had the ignition cut-out cord attached. The owner of the jet ski, a licensed operator, was observing from the beach.

While manoeuvring, the jet ski rider was thrown forward hitting his face on the jet ski and falling into the water. The ignition cut-out cord did its job and the jet ski stopped.

The owner immediately swam out to the rider and pulled the semi-conscious rider to shore. The rider had obvious head injuries (his face was blue).

Members of a nearby surf club attended the injured rider and administered oxygen pending the arrival of an ambulance which took the rider to hospital. The rider sustained a fractured eye socket and a fractured neck.

Subsequent investigation revealed that the owner had not checked whether the rider was licensed prior to allowing him to operate the jet ski. Neither did the owner display a Ride Smart sticker. He also failed to complete a Marine Incident Report within 48 hours of the incident.

Safety insights

- Jet skis, because of the nature of their operation and their operational capabilities require that riders be skilled and competent to ride a jet ski (the earlier-mentioned jet ski licensing initivative addresses this issue).
- Unlicensed riders should only operate a jet skis under the direct supervision of a licensed rider who is able to take immediate control as necessary. Observation from the beach does not satisfy 'direct supervision' obligations.
- The regulatory requirement to display a Ride Smart sticker is to visibly reinforce jet ski operational safety requirements — to both licensed and unlicensed riders.
- Masters are required to report marine incidents to a shipping inspector within 48 hours of an incident occurring.

Recreational motorboat involvement in FSI incidents in 2004 was in line with their previous four-year average involvement in four FSI incidents per year. While no fatalities were recorded from recreational motorboat incidents in 2004, there were five serious injuries recorded.

Analysis shows that the predominant characteristics of recreational vessel incidents involving fatality and/or serious injuries in 2004 were, as expected, incidents occurring in fair-to-good visibility, daylight hours, smooth waters and clear conditions. These factors were involved in more than 54.5 per cent of recreational vessel FSI incidents.

A significant proportion of the state's total boating activity is concentrated in South-East Queensland. Combined, the Brisbane and Gold Coast regions account for more than 57 per cent of the state's registered recreational vessel fleet. Despite this concentration and the extensive associated recreational boating activity in the south-east sector of the state, only 51 per cent of total recreational vessel incidents involving fatality or serious injury in Queensland occurred in South East Queensland. While there were no recreational boating fatalities recorded in either region, there were 18 serious injuries reported – eight in the Gold Coast region and ten in the Brisbane region. With such concentrated boating activity, the involvement of recreational vessels in FSI incidents in South East Queensland will continue to be monitored with a view to targeting compliance and educational initiatives in this area.

3.2 Incidents involving commercial vessels

The number of registered commercial vessels has been steadily increasing over the last five years (with 1.8 per cent growth in 2004), as shown earlier in Figure 11. In 2004, commercial vessels represented 3.02 per cent of Queensland's registered vessel fleet, but were involved in 401 (65 per cent) of the

year's 618 reported marine incidents. Figure 20 shows the relative involvement of the different types of commercial vessels in marine incidents in 2004, together with their previous four-year average involvement in incidents.

Figure 20

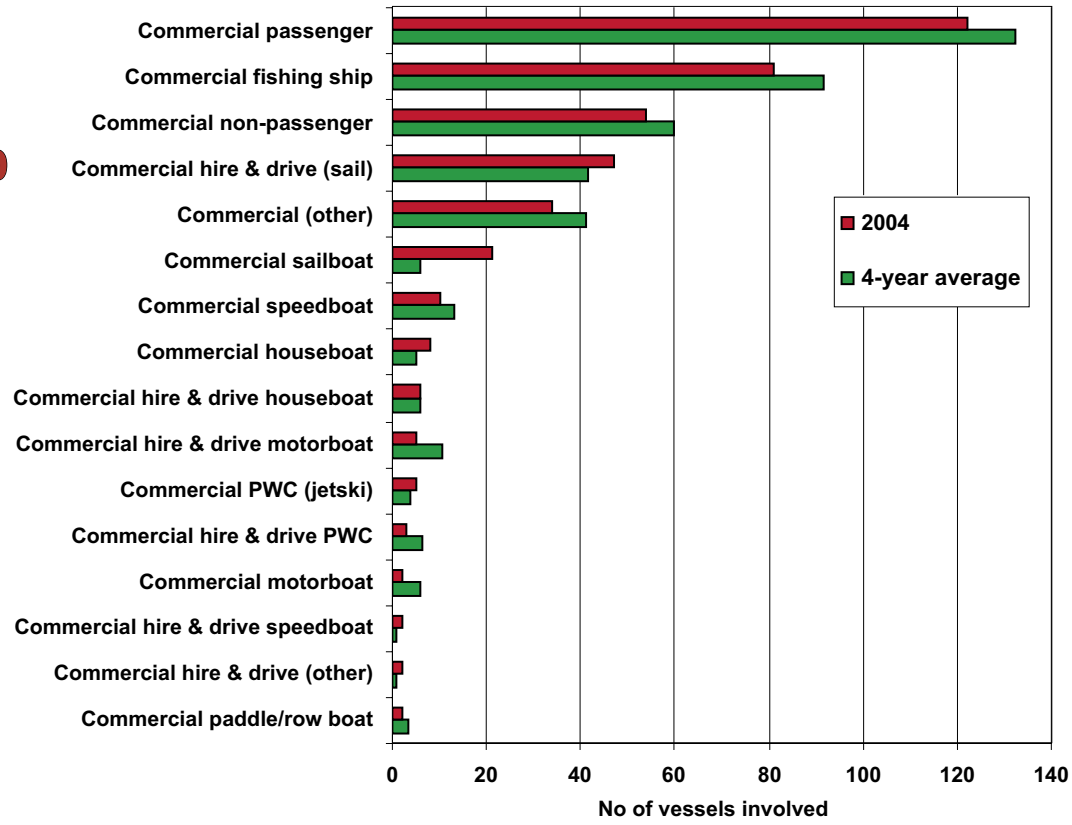


Figure 20: All incidents by commercial vessel type - 2004

Looking at the more serious marine incidents, commercial vessels were involved in 19 (44.2 per cent) of the State's 43 FSI incidents in 2004—below their four-year average involvement in 30.75 FSI incidents.

Seven fatalities resulted from marine incidents in 2004 involving commercial vessels, compared with two fatalities in 2003 and a previous four-year average fatality rate of four. Of the 19 FSI incidents in 2004 involving commercial vessels, five involved vessels capsizing, five involved onboard incidents including four crushing incidents and four involved a person overboard. Two of the commercial vessel FSI incidents involved a person being struck by the vessel or its propeller.

The most frequently represented commercial vessels in FSI incidents in 2004 were commercial fishing vessels. There were seven commercial fishing vessel incidents resulting in four fatalities and three serious injuries. This compares with only two commercial fishing vessel FSI incidents in 2003 and a previous four-year average of 7.25 commercial fishing vessels involved in FSI incidents. Two of the fishing vessels capsized and sank, with three men perishing as a result. The other commercial fishing ship fatality was the result of a skipper becoming entangled in the vessel's drum winch and getting crushed. The three serious injuries were the result of an onboard fall while the vessel was operating, a person going overboard and another crushing incident.

The next most frequently involved commercial vessels were commercial passenger vessels. There were five FSI incidents involving commercial passenger vessels in 2004. These five incidents resulted in one fatality and four serious injuries. The five commercial passenger vessel FSI incidents included a speed-related collision between two vessels in which one of the operators lost his life, a collision between a commercial passenger vessel and a fixed object, two personal injury incidents, and one person overboard incident.

Incident study 2

Commercial water taxi fatal collision

The vessels: A six-metre commercial water taxi and a nine-metre semi-displacement recreational cruiser

The incident

A water taxi and a recreational cruiser were approaching each other along a navigable channel at twilight. Conditions were calm and although visibility was reasonable, light was fading. The water taxi, with only the master aboard, was travelling at a speed several witnesses estimate at around 35 knots. The cruiser, also with only the master aboard, was proceeding at around 6 knots. Both vessels had their navigation lights on.

The master of the cruiser observed the water taxi heading directly towards him. So he made a small alteration to starboard. The water taxi seemed to mirror his course change and continue towards the cruiser. The cruiser master then made a series of small alterations to port then to starboard, as the water taxi continued to seemingly alter course each time to head towards the cruiser. While making a starboard course alteration, the vessels collided.

The master of the water taxi was killed by the impact, and thrown into the water. The master of the cruiser was not physically injured, but was treated for shock at the scene.

Safety insights

- Masters need to keep a proper lookout by sight and hearing to adequately assess the risk of a collision and to then act positively and noticeably to avoid a collision.
- The use of all available resources such as radios, lights and whistles/horns may also reduce the likelihood of collisions.
- Vessels should be operated at a speed commensurate with prevailing light conditions and visibility to enable sufficient reaction time to minimise the risk of a collision.

There were ten commercial vessels lost as a result of marine incidents in 2004. Notably, all ten were commercial fishing vessels. Two of these incidents resulted in two fatalities.

From the perspective of regional involvement in commercial vessel FSI incidents, it is noteworthy that the Cairns region recorded eight of the 19 FSI incidents in 2004, compared with a zero result in 2003. FSI incidents in the Cairns region in 2004 resulted in two fatalities and six serious injuries. Brisbane and Gold Coast regions each recorded two fatalities in 2004 as a result of commercial vessel incidents. Gladstone region recorded one commercial vessel fatality in 2004.

In 2004, 10 (52.6 per cent) commercial vessel FSI incidents occurred in offshore waters. This is in line with the relative involvement of commercial vessels in FSI incidents in offshore waters in the previous four-year period (10).

Commercial fishing dangers

The vessel: 7 metre aluminium commercial fishing vessel

The incident

A commercial fisherman was killed while fishing alone in coastal waters. His vessel, fitted with a rear control console and powered by dual 90hp outboard motors, was found drifting off Marcoola Beach. The vessel had a forward-mounted, mechanically-powered net drum. The deceased fisherman was discovered entangled in the nets that were wound around the net drum. The actual cause of death and factors contributing to the incident are not known as there were no witnesses. It appears that the man became caught up in the net whilst it was being retrieved.

Safety insights

- Sole operation of any vessel is inherently dangerous, particularly in situations where emergency assistance may be required.
- Masters must ensure that their vessel is not only safe to operate, but appropriately equipped and crewed to meet the likely risks of the intended task or voyage.
- Commercial fishing is a dangerous occupation. Fishers need to be mindful of the risks, particularly the high risk of entanglement while net fishing, and to go beyond minimum safety standards, particularly when sole-operating.
- Fishers should always be personally equipped with the tools necessary to cut away fishing equipment.
- The wearing of a lifejacket and a personal EPIRB is highly recommended for any sole person operation of a vessel.
- Hydraulic equipment on vessels should be fitted with safety guards and automatic cut-off switches, to prevent or minimise injury.

Incident study 3

3.3 Incidents involving a person overboard

In 2004 there were 18 reported marine incidents involving a person overboard. Despite being under-represented when compared with the previous four-year average involvement of 22.75, these incidents are significantly over-represented in terms of their outcome. While the 18 reported person overboard incidents represent only 2.9 per cent of the 618 reported marine incidents in 2004, they account for 25 per cent of the marine incident fatalities recorded in 2004. This follows the 57 per cent representation of person overboard incidents in marine incident fatalities in 2003.

Seven of the 18 person overboard incidents in 2004 occurred in offshore waters and four of these incidents resulted in two fatalities and two in serious injuries. There were four person overboard incidents in smooth waters and four in partially smooth waters.

Of the 18 person overboard incidents reported, 13 involved commercial vessels and five involved recreational vessels. Four of the six recorded fatalities and serious injuries from person overboard incidents in 2004 resulted from incidents involving commercial vessels.

Human factors such as inattention and alcohol and drugs were identified as contributing to more than 77 per cent of the 18 reported person overboard incidents, with drugs and alcohol identified as contributing to more than 27 per cent of these incidents. More than 66 per cent of the reported person overboard incidents occurred in clear weather, good visibility and light to moderate wind conditions.

Incident study 4

Persons overboard from recreational speedboat

The vessel: A three-metre aluminium recreational speedboat

The incident

Four boys aged between 10 and 11 years were using a small tinnie to tow each other around Tallebudgera Creek on a rubber tube. Three of the boys were in the tinnie and the fourth on the rubber tube. All of the boys were well under the licensing age for recreational boat operation and there were no licensed persons supervising the operations of the tinnie. The tinnie, which should have been registered, was not registered.

Two of the boys took turns at operating the vessel. Some of their manoeuvres were quite erratic. One had just taken the controls when the tinnie suddenly turned and started doing circles in the water. The boy at the controls was thrown forward whilst the other two were thrown into the water. In the process the boy on the rubber tube became entangled in the tow rope and was pulled underwater.

The tinnie's motor eventually cut out. The two boys thrown from the vessel made their way back into the vessel, pulled the tube in and managed to free the entangled boy who, up to this point, was still underwater. The boy thrown forward sustained a deep cut to his head.

The boys paddled the tinnie ashore and were helped by the resident of a nearby house. The Ambulance Service attended and transported two of the boys to hospital – one for stitches to his head and the other for shock. Neither were admitted to hospital.

Safety insights

- Unlicensed persons should not be operating a recreational speedboat, except under the direct supervision of an appropriately licensed person.
- Vessels being used for towing a skier or similar towing activity must be operated by an appropriately licensed person. There must also be an observer in the vessel who is at least 12 years of age.

3.4 Incidents involving jet skis

In December 2000 there were 3,348 registered recreational jet skis in Queensland. There were a further 166 jet skis registered for commercial use. At that time jet skis represented approximately 1.7 per cent of the total registered vessel fleet in Queensland.

At the end of December 2004 there were 7,956 recreationally registered jet skis and 229 commercially registered jet skis in Queensland, representing a 133 per cent increase in numbers over the four-year period. Growth in registered jet ski numbers in 2004 alone was in excess of 18 per cent, compared with five per cent for registered vessels generally. Jet skis currently make up approximately 4.2 per cent of all registered vessels in Queensland.

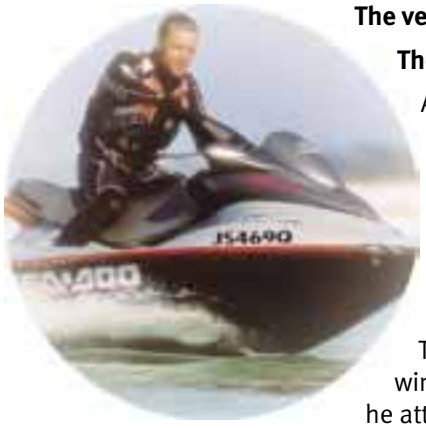
Historically, jet skis have not figured significantly in reported marine incidents. To some extent, this is likely to have been as a result of under-reporting rather than an absence of incidents. In 2004, there was a noticeable increase in the number of reported jet ski incidents. This increase is considered to reflect both an improvement in the level of reporting and heightened media coverage given jet skis and jet ski issues in 2004. During the year there were a number of high profile media reports about incidents involving jet skis.

As mentioned in section 2.4.4, following a comprehensive review of jet ski operations in Queensland, the government has introduced a multi-faceted jet ski management plan. As well as the mandatory jet ski licensing components of the plan, effective from 1 January 2006, MSQ has also ramped-up its jet ski safety education and on-water enforcement programs.

In 2004, there were 31 reported marine incidents involving jet skis in Queensland. This compares with the 18 jet ski incidents reported in 2003 and a previous four-year average of 23.75 jet ski incidents. Human factors were identified as contributing to 78 per cent of the 31 reported jet ski incidents in 2004, with inattention, human operator error and excessive speed the most frequently identified contributing factors. More than 58 per cent of the reported jet ski incidents involved collisions, either with another vessel, with the shore or with some other fixed structure. The majority (55+ per cent)

of jet ski incidents occurred in smooth waters and an average of 70 per cent of the incidents occurred between the hours of 7:00am and 5:00pm, in clear weather conditions, nil to light winds and in good visibility. Almost 78 per cent of the incidents occurred in south-east Queensland. In terms of the types of jet skis involved, 23 were recreationally registered jet skis, five were commercially operated jet skis and three were commercial hire jet skis.

Jet ski misadventure



The vessel: Recreational jet ski

The incident

Around sunset, two friends decided to have some fun on their jet skis in the waters of Keppel Bay near Great Keppel Island. The weather was less than favourable - winds were strong, seas were rough and darkness was approaching.

Somewhere between Great Keppel Island and Pelican Island one of the jet skis broke down. It appears the other jet skier did not have visual contact with his friend and was therefore unaware of the breakdown.

The master of the broken down jet ski remained with his vessel until the wind and current brought him close to Pelican Island. After reaching shore, he attempted to hold the jet ski in the choppy waters of the foreshore. But he eventually succumb to the strong current and prevailing wind and the jet ski drifted away.

Meanwhile, the other jet skier attempted to locate his friend. With darkness approaching and having no success in locating his friend, he reported his friend missing to the local volunteer marine rescue group. After spending the night on the foreshore the stranded jet skier was located and picked up by a Search and Rescue helicopter the next morning. While he was unharmed by his misadventure, his jet ski was never located.

Safety insights

- Trip-planning is critical to any boating adventure, and must take account of the range of prevailing conditions including sea, wind, visibility and light/time conditions.
- Trip-planning also involves ensuring that vessels are seaworthy for the intended trip, and that all the necessary safety equipment is available and accessible – to deal with any potential emergency that might arise.
- The jet ski operators in this instance should have maintained visual contact with one another. Doing so would have obviated the need for a costly search and rescue operation, and would likely have avoided the loss of the jet ski.

Incident study 5

Turning to the more serious marine incidents, there were eight such jet ski incidents reported in 2004 that resulted in serious injuries. These eight incidents resulted in 10 serious injuries requiring hospitalisation. While jet skis currently comprise only 4.18 per cent of all registered vessels in Queensland, in 2004 jet ski incidents made up nearly 18.6 per cent of reported incidents resulting in fatality or serious injury. While there has only been one recorded jet ski incident fatality in Queensland (in 2000), jet ski incidents are increasingly resulting in serious injuries. Of the 10 serious injuries sustained in reported jet ski incidents in 2004, seven resulted from collisions, and three from falls or the way in which the jet skis were operated. Seven of the eight serious injury incidents occurred in the Brisbane and Gold Coast regions. Almost 100 per cent of the serious injury incidents occurred in what would be deemed ideal operational conditions.

Of the 10 persons injured, six were jet ski riders and four were passengers. Two of the injured passengers were children and two were female passengers in a speedboat with which a jet ski collided.

Six of the jet ski riders were appropriately licensed and four were unlicensed – a 16 year old male, a 17 year old male, a 22 year old female and a 30 year old male. The jet ski riders involved in the eight serious injury incidents ranged in age from 16 years to 50 years. The average age of all the riders involved was a little over 32 years – with two riders under 20 years of age (both unlicensed), four between 21 and 30 years, and four between 31 and 50 years.

In view of the high public profile of jet ski issues, the recent rise in the number of reported jet ski incidents and the soon to be implemented suite of government jet ski management initiatives, the involvement of jet skis in marine incidents will continue to be monitored and reported annually.

3.5 Incidents occurring in offshore waters

The offshore category is one of four incident location descriptors and includes waters beyond designated smooth and partially smooth waters off the Queensland coast. In 2004, 123 (20 per cent) of the state's 618 reported marine incidents occurred in offshore waters. Of these incidents, 16 resulted in eight fatalities and 11 serious injuries. This represents a significant over-representation in the proportion of FSI incidents in offshore waters compared with the five offshore FSI incidents reported in 2003 and the previous four-year average of 14.5 offshore FSI incidents.

Not unexpectedly, the prevailing wind and weather conditions and visibility for the 123 reported offshore marine incidents varied significantly. For the 16 reported FSI incidents in offshore waters nearly 50 per cent occurred in otherwise favourable conditions.

There were 20 vessels involved in the 16 reported FSI incidents in offshore waters in 2004. The vessels most frequently involved were:

- Commercial fishing vessels (7)
- Recreational speedboats (4)
- Recreational jet skis (3), and
- Commercial motorboats (2)

Commercial fishing vessels continue to be over-represented in offshore incidents often with severe outcomes in terms of fatalities and ship losses. In 2004 there were six FSI incidents involving commercial fishing ships. These incidents resulted in four fatalities, two serious injuries and two ships lost. A further two commercial fishing ships were lost in non-FSI incidents in offshore waters.

Incident study 6

Commercial fishing ship and master lost in shipping channel incident

The vessels: Class 3B offshore commercial fishing ship and a commercial trade ship/freighter

The incident

Around midnight a commercial fishing ship was trawling off the John Brewer Reef area near Townsville. The ship's master and one deckhand were onboard — both very experienced seamen. The deckhand was on watch while the master was sleeping. Just before midnight the deckhand noticed a large ship on the radar at about 4-6 nautical miles. He went to wake up the master to prepare to winch up the nets. On returning to deck he noticed the green sidelight and white masthead light of a large ship, much closer than he expected. By the time he ran back to warn the master that a collision was imminent, the trawler's nets became fouled by the freighter and the trawler was dragged under the water, stern first. The deckhand jumped overboard but the master was lost with his ship.

The master of the freighter was aware of the presence of fishing vessels in the area but did not consider the likely risk of a collision. While the freighter took some avoidance actions when a collision was imminent, he failed to sound signals of warning or course alteration. Neither did the freighter make radio contact with any of the fishing vessels at any time.

Safety insights

- Masters need to keep a proper lookout by sight and hearing to adequately assess the risk of a collision and to then act positively and noticeably to avoid a collision.
- Extra vigilance is required where vessels are restricted in ability to manoeuvre, for example, fishing ships when trawling and trading ships because of the time they take to change course or stop.
- The use of all available resources such as radios, lights and whistles/horns may also reduce the likelihood of collisions.

Recreational speedboats were also over-represented in offshore FSI incident in 2004. There were four single-vessel recreational speedboat incidents reported as occurring in offshore waters in 2004. These four incidents resulted in three fatalities, four serious injuries and the lost of one of the vessels.

There were a total of 13 vessels reported as lost as an outcome of the 123 reported offshore waters incidents in 2004. Nine of these were recreational vessels including six recreational sailing boats, two recreational speedboats and one recreational motorboat. The remaining four ships lost were commercial fishing vessels.

4. Boating incidents

4.1 Introduction

Boating incidents are those incidents which involve calls for assistance from volunteer rescue authorities for problems such as mechanical breakdowns, running out of fuel and fouled propellers. Boating incident data is provided to MSQ by regional volunteer marine rescue organisations.

While boating incidents are not counted as marine incidents (unless their severity qualifies them as such), boating incident data has been included to supplement the analysis of marine incidents contained in this report. Boating incident reports also provide a useful tool for validation of the level of marine incident reporting by highlighting incidents that might have escaped the normal marine incident reporting process.

In 2004, regional volunteer marine rescue organisations including the Australian Volunteer Coastguard Association and the Queensland Volunteer Marine Rescue Organisation combined to provide a strong safety net for the professional and recreational maritime community in Queensland. As well as attending callouts for assistance, they continue to perform an important extension role for Maritime Safety Queensland in its administration of maritime safety programs.

4.2 Callouts for assistance

Volunteer marine rescue and coastguard flotillas reported responding to 2843 callouts for assistance state-wide in 2004 — 146 more callouts than in 2003 and up markedly on the previous four-year average of 2596 callouts.

Figure 21 shows comparative boating incident callout numbers for the past seven years.

Figure 21

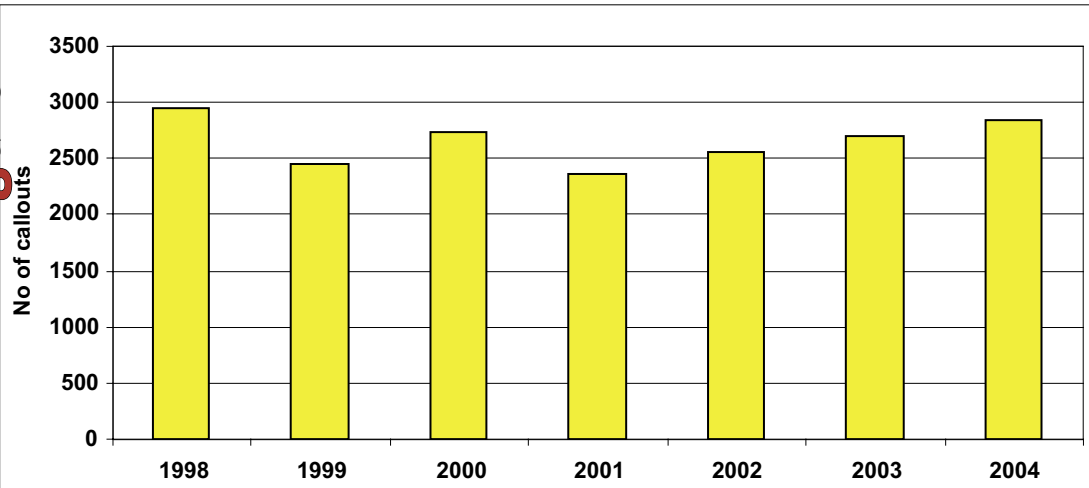


Figure 21: Volunteer marine rescue organisation callouts 1998 - 2004

South-East Queensland (Brisbane and Gold Coast regions) with more than 56 per cent of the state's registered vessel fleet, reported 2053 (71.5 per cent) of the state's callouts in 2004. This is significantly higher than this region's corresponding proportion of marine incidents (44.17 per cent), and well above the combined region's four-year average number of callouts of 1875 callouts. After the combined South-East Queensland region, the next most significant number of callouts occurred in the Gladstone region with 363 callouts (12.8 per cent), down on the 388 callouts in 2003 and the region's previous four-year average number of callouts of 399.5.

Figure 22 provides a comparative regional breakdown of boating incident callout numbers over the last seven years. Disaggregated data for Gold Coast and Brisbane region boating incident callouts was not available to Maritime Safety Queensland until 2001.

It is noted that following two years of increases in boating incident callout numbers in the Brisbane region, callout numbers have fallen in 2004.

Figure 22

Figure 22: **Boating incident callouts by region 1998 - 2004**

It is also noted that reported boating incidents in the Mackay region have jumped significantly after a number of years of low reported boating incident numbers. It has now been confirmed that in recent years MSQ has not been receiving the full complement of boating incident reports from volunteer marine rescue organisations in the Mackay region.

Incident study 7

Recreational runabout capsized on coastal bar

The vessel: 4.3 metre fibreglass recreational speedboat

The incident

A fibreglass runabout powered by a 40hp outboard engine, attempted to cross the Noosa River bar just prior to high water. The owner was recently licensed as was one of his two passengers. The owner who was at the helm was attempting his first bar crossing as skipper.

He waited in line for his turn to cross the bar, observing the track and progress of preceding vessels. When his turn came the master accelerated and began the crossing.

The first wave was negotiated without difficulty but the master was surprised by the size of the second wave, which pushed the vessel slightly sideways. Despite the seemingly innocuous impact of this wave, the vessel capsized, dumping all three men into the water.

They clung to the boat as it drifted back into the river mouth. A volunteer Coastguard vessel attended the incident and towed the capsized vessel and its occupants back to the boat ramp.

The owner reported this incident to Maritime Safety Queensland as he was required to do.

The owner had purchased the vessel only one month earlier, and had held his boat licence for approximately two weeks. While he had crossed the bar before as a passenger, he had never skippered a vessel across the bar. On this occasion he relied on observations of other vessels to guide his crossing of the bar.

Safety insights

- Crossing of coastal bars can be extremely hazardous, particularly for the inexperienced.
- Careful pre-planning and consideration of prevailing bar wave patterns is essential before making bar crossings.
- All persons onboard should wear a lifejacket when crossing coastal bars.
- Before proceeding to cross a coastal bar, masters should ensure that all appropriate safety gear is aboard and ensure it is ready for use in an emergency.
- Holding a boat licence does not make a person competent to safely undertake hazardous bar crossings – special bar crossing training courses are available in most centres, and are recommended.

4.3 Reasons for callouts

During 2004 the predominant reasons for the assistance provided by volunteer organisations included:

- Breakdowns—1610 callouts (56.6 per cent)
- Grounding of the vessel—230 (8.1 per cent), and
- Vessel sinking (taking on water)—169 (5.95 per cent)
- Fuel problems—149 (5.25 per cent)

Fuel problems mentioned above included contaminated fuel, leaking fuel lines and running out of fuel.

Figure 23 shows the top ten reasons for callout. These reasons for callout reinforce the ongoing need for marine safety education and awareness programs to address basic operational boating issues. Maritime Safety Queensland uses this data to inform initiatives like the Boat Smart campaign and other boating safety educational campaigns.

Tables 29 and 30 in Appendix 1 of this report provide further data relating to boating incidents.

Figure 23

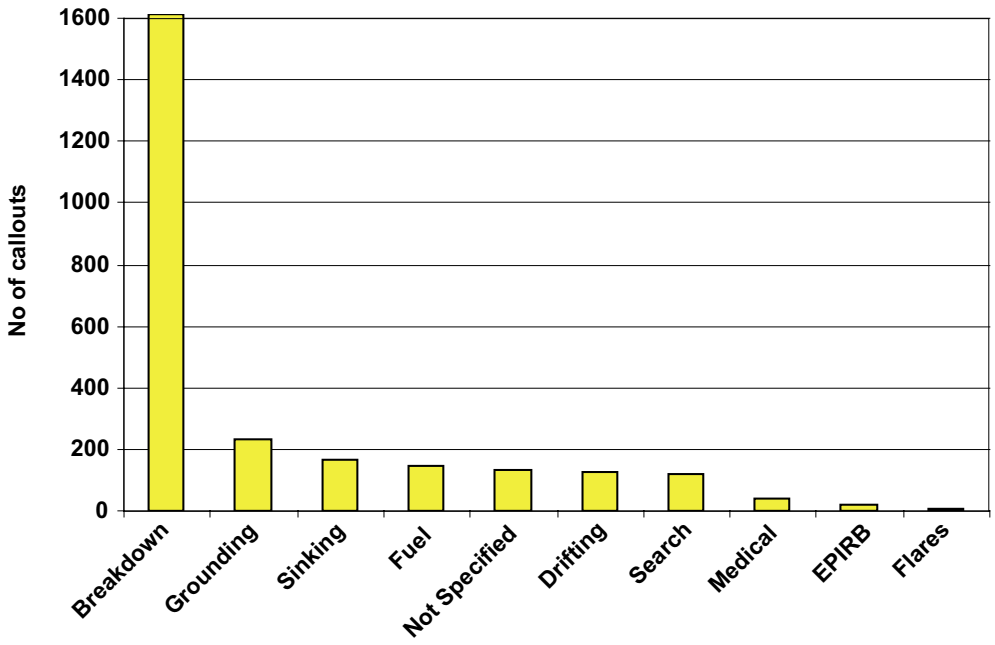


Figure 23: **Boating incident callouts - by reason for callouts - 2004**

Appendix 1

Marine incident related tables

In this appendix, the major characteristics of reported marine incidents are presented in a time-series format. The sources for the majority of data are Maritime Safety Queensland's marine incident database, the commercial vessel registration database and Queensland Transport's recreational vessel registration database. Australian Bureau of Statistics data is also used.

For ease of reference, the following codes are used for the six Maritime Safety Queensland regional operations areas:

- Gold Coast = GC
- Brisbane = BN
- Gladstone = GL
- Mackay = MK
- Townsville = TV
- Cairns = CN

It should be noted that the Gold Coast region was only established for reporting purposes in 2000.

The acronym PWC is used throughout these tables and refers to personal watercraft, or "jet skis" as they are better known.

Wind forces used in these tables are based on the Beaufort scale.

A list of the tables included in this appendix is provided on the next page.

Tables

Table 1 Marine fatalities per 1,000,000 persons 1976 to 2003 by state and territory

State / territory	76-79	80-84	85-89	90-94	95-99	2000-03
New South Wales	8.45	5.10	4.27	3.29	2.65	2.05
Victoria	9.03	5.16	4.37	4.10	2.04	2.05
Queensland	12.31	5.23	4.02	5.14	2.59	1.78
South Australia	13.18	7.35	4.59	3.99	2.43	0.68
West Australia	10.09	8.70	4.94	4.71	4.12	2.45
Tasmania	34.82	26.03	14.70	15.59	15.96	5.63
Northern Territory	25.81	16.94	11.52	22.53	5.38	8.47
Australian Capital Territory	11.63	0.86	2.27	2.05	0.65	2.07

Source: Australian Bureau of Statistics

Table 2 Incidents involving fatalities and serious injuries 1999 - 2004 and year 2004 by region

Incidents	1999	2000	2001	2002	2003	2004	GC	BN	GL	MK	TV	CN
No of incidents involving fatalities	9	12	9	9	7	10	2	2	3	0	0	3
No of incidents involving serious injuries	58	73	37	53	21	33	7	11	3	2	1	9
Fatality/serious injury incidents	**67**	**85**	**46**	**62**	**28**	**43**	**9**	**13**	**6**	**2**	**1**	**12**

Table 3 Fatalities and serious injuries 1999 - 2004 and year 2004 by region

Fatalities and serious injuries	1999	2000	2001	2002	2003	2004	GC	BN	GL	MK	TV	CN
No of fatalities	10	12	12	10	7	12	2	2	3	0	0	5
No of serious injuries	66	84	43	61	22	37	9	12	3	3	1	9
Total fatalities and serious injuries	**76**	**96**	**55**	**71**	**29**	**49**	**11**	**14**	**6**	**3**	**1**	**14**

Table 4 Environmental factors contributing to fatal and serious injury incidents 1999 - 2004 and year 2004 by region

Environmental factors	1999	2000	2001	2002	2003	2004	GC	BN	GL	MK	TV	CN
Bar conditions	3	3	0	1	1	1	0	1	0	0	0	0
Floating or submerged object	1	1	1	1	0	0	0	0	0	0	0	0
Hazardous season (cyclones etc)	1	1	0	0	0	0	0	0	0	0	0	0
Hazardous waters - coral reefs	0	0	1	0	0	0	0	0	0	0	0	0
Hazardous waters - shifting channels	0	0	1	1	0	0	0	0	0	0	0	0
Hazardous waters - uncharted hazards	0	0	1	1	0	0	0	0	0	0	0	0
Heavy traffic area	0	0	0	1	1	0	0	0	0	0	0	0
Other	0	4	2	0	1	2	0	2	0	0	0	0
Poor visibility	0	1	1	5	0	2	0	0	0	1	1	0
Sea state	6	16	7	19	5	7	0	2	0	0	0	5
Wash of passing vessel	3	1	1	3	1	2	1	1	0	0	0	0
Wind	1	1	3	20	1	1	0	0	0	0	0	1
Total environmental factors attribution	**15**	**28**	**18**	**52**	**10**	**15**	**1**	**6**	**0**	**1**	**1**	**6**

Table 5 Human factors contributing to fatal and serious injury incidents 1999 - 2004 and year 2004 by region

Human factors	1999	2000	2001	2002	2003	2004	GC	BN	GL	MK	TV	CN
Alcohol or drugs	2	1	1	0	1	2	1	0	1	0	0	0
Commercial pressure	1	1	1	0	0	1	0	0	0	0	0	1
Excessive speed	6	3	4	3	3	2	1	1	0	0	0	0
Fatigue	2	0	2	0	1	1	0	0	0	0	0	1
Inadequate training of crew	1	4	2	4	2	2	0	0	1	0	0	1
Inappropriate instructions to crew - other	0	0	0	2	1	0	0	0	0	0	0	0
Poor communication of instructions to crew	0	0	0	3	0	0	0	0	0	0	0	0
Inattention	5	20	9	18	5	17	4	4	4	1	0	4
Insufficient maintenance	1	0	0	0	0	1	0	1	0	0	0	0
Insufficient planning	0	2	1	4	0	1	0	0	0	0	0	1
Navigation error-failure to keep proper lookout	2	2	1	7	1	4	1	1	0	0	1	1
Navigation error-lack of knowledge/experience	1	3	1	5	0	0	0	0	0	0	0	0
Navigation error-other	4	1	1	3	2	0	0	0	0	0	0	0
Navigation error-violation of Collision regs	1	1	2	3	2	2	1	1	0	0	0	0
Operational error-other	6	11	14	27	11	8	5	1	0	1	0	1
Poor communications	1	0	1	3	0	0	0	0	0	0	0	0
Violation of standard procedures	1	0	1	10	1	1	0	1	0	0	0	0
Violation of statutory rules or standards	0	2	0	9	1	0	0	0	0	0	0	0
Total human factors attribution	**34**	**51**	**41**	**101**	**31**	**42**	**13**	**10**	**6**	**2**	**1**	**10**

Table 6 Material factors contributing to fatal and serious injury incidents 1999 - 2004 and year 2004 by region

Material factors	1999	2000	2001	2002	2003	2004	GC	BN	GL	MK	TV	CN
Bridge or navigation failure	0	2	0	0	0	0	0	0	0	0	0	0
Electrical failure	0	1	1	0	0	0	0	0	0	0	0	0
Equipment failure - other	5	0	1	1	0	0	0	0	0	0	0	0
Fuel or gas leak	0	1	1	0	0	1	0	1	0	0	0	0
Hull failure	1	0	1	1	0	0	0	0	0	0	0	0
Inadequate stability - other	0	1	1	0	0	0	0	0	0	0	0	0
Inappropriate hull or equipment-design fault	0	3	1	1	0	1	0	1	0	0	0	0
Insufficient maintenance of hull/equipment	2	0	0	3	0	0	0	0	0	0	0	0
Insufficient safety equipment	0	0	0	0	0	0	0	0	0	0	0	0
Machinery failure	1	0	0	5	1	2	0	0	1	0	0	1
Other	2	9	1	1	1	1	0	1	0	0	0	0
Shore structure badly designed/maintained	0	1	0	0	0	0	0	0	0	0	0	0
Total material factors attribution	**11**	**18**	**7**	**12**	**2**	**5**	**0**	**3**	**1**	**0**	**0**	**1**

Table 7 Fatal and serious injury incident type 1999 - 2004 and year 2004 by region

Incident type classifications	1999	2000	2001	2002	2003	2004	GC	BN	GL	MK	TV	CN
Capsizing	1	1	1	2	0	1	0	0	1	0	0	0
Capsizing flooding	1	1	0	0	0	0	0	0	0	0	0	0
Capsizing sinking	0	3	0	1	0	3	0	1	0	0	0	2
Capsizing swamping	4	2	2	3	0	4	2	1	0	0	0	1
Collision between ships	11	8	2	10	3	6	4	1	0	0	0	1
Collision with a fixed object	2	4	3	2	0	4	1	1	0	1	0	1
Collision with an animal	0	0	0	0	0	0	0	0	0	0	0	0
Collision with floating object	0	0	1	0	0	1	0	1	0	0	0	0
Collision with overhead obstruction	0	1	0	0	0	0	0	0	0	0	0	0
Collision with submerged object	0	2	0	1	0	0	0	0	0	0	0	0
Collision with a wharf	0	0	0	0	0	0	0	0	0	0	0	0
Explosion	2	1	2	1	0	0	0	0	0	0	0	0
Fire	2	0	0	1	1	1	0	1	0	0	0	0
Grounding intentional	1	1	0	0	0	0	0	0	0	0	0	0
Grounding unintentional	2	5	1	0	1	1	0	0	0	0	1	0
Loss of ship	0	0	0	2	1	0	0	0	0	0	0	0
Loss of stability	0	0	0	0	0	0	0	0	0	0	0	0
Onboard incident crushing or pinching	5	4	0	3	1	4	0	1	1	1	0	1
Onboard incident falls within ship	10	7	6	4	3	4	1	1	1	0	0	1
Onboard incident other onboard injury	5	16	5	5	2	0	0	0	0	0	0	0
Other	0	0	2	0	0	0	0	0	0	0	0	0
Other - Close Call	0	0	0	0	0	0	0	0	0	0	0	0
Other - Crime Issue	0	0	0	0	0	0	0	0	0	0	0	0
Other - Ship Adrift	0	0	0	0	0	0	0	0	0	0	0	0
Other personal injury caused by operation of ship	2	7	1	8	4	4	0	2	1	0	0	1
Other personal injury diving incident	1	1	0	1	0	0	0	0	0	0	0	0
Other personal injury hit by propellor or ship	1	2	3	3	4	2	0	0	0	0	0	2
Other personal injury parasailing incident	1	0	1	0	0	0	0	0	0	0	0	0
Other personal injury water ski incident	3	5	5	4	2	2	1	1	0	0	0	0
Person overboard	11	11	8	9	6	6	0	2	2	0	0	2
Structural failure	0	1	1	0	0	0	0	0	0	0	0	0
Incident type distribution	**65**	**83**	**44**	**60**	**28**	**43**	**9**	**13**	**6**	**2**	**1**	**12**

Table 8 Location of fatal and serious injury incidents 1999 - 2004 and year 2004 by region

Location classifications	1999	2000	2001	2002	2003	2004	GC	BN	GL	MK	TV	CN
Not specified	1	1	1	0	0	0	0	0	0	0	0	0
Inland waters	17	18	12	13	2	3	2	1	0	0	0	0
Offshore	10	20	10	19	5	16	2	6	3	1	0	4
Partially smooth waters	27	19	10	10	6	6	1	0	0	1	0	4
Smooth waters	10	25	12	18	15	18	4	6	3	0	1	4
Distribution by location classifications	**65**	**83**	**45**	**60**	**28**	**43**	**9**	**13**	**6**	**2**	**1**	**12**

Table 9 Fatal and serious injury incidents by month 1999 - 2004 and year 2004 by region

Months	1999	2000	2001	2002	2003	2004	GC	BN	GL	MK	TV	CN
January	7	14	3	11	2	4	1	2	1	0	0	0
February	5	4	0	4	2	7	4	2	0	0	0	1
March	5	14	5	2	1	2	1	0	1	0	0	0
April	11	10	4	5	1	6	1	3	0	0	0	2
May	7	7	3	5	2	3	0	0	1	1	0	1
June	4	6	2	5	2	2	0	0	0	1	1	0
July	2	7	6	8	2	3	0	1	0	0	0	2
August	5	8	6	3	2	2	0	1	1	0	0	0
September	6	4	1	8	3	2	0	1	0	0	0	1
October	2	4	6	2	4	5	1	1	1	0	0	2
November	5	2	5	1	2	2	0	2	0	0	0	0
December	6	3	4	6	5	5	1	0	1	0	0	3
Fatality/serious injury incidents	**65**	**83**	**45**	**60**	**28**	**43**	**9**	**13**	**6**	**2**	**1**	**12**

Table 10 Fatal and serious injury incidents 1999 - 2004 by region

Region	1999	2000	2001	2002	2003	2004
Gold Coast	0	10	10	14	7	9
Brisbane	27	29	13	20	7	13
Gladstone	17	16	5	4	5	6
Mackay	11	15	7	8	6	2
Townsville	7	7	1	2	3	1
Cairns	3	6	9	12	0	12
Not specified	0	0	0	0	0	0
Fatality/serious injury incidents	**65**	**83**	**45**	**60**	**28**	**43**

Table 11 Fatal and serious injury incidents by time of day 1999 - 2004

Time of day	1999	2000	2001	2002	2003	2004
Not specified	1	5	4	2	1	3
Dawn	3	3	1	1	2	3
Day time	52	62	33	44	19	25
Dusk	3	3	1	5	2	3
Night time	6	10	6	8	4	9
Fatality/serious injury incidents	**65**	**83**	**45**	**60**	**28**	**43**

Table 12 No. of ships involved in fatal and serious injury incidents 1999 - 2004 by ship type

Ship type	1999	2000	2001	2002	2003	2004
Not specified	0	0	0	0	0	0
COM Fishing	6	10	6	10	3	8
COM Hire & Drive	0	0	0	0	0	0
COM Hire & Drive (House)	0	0	0	0	0	0
COM Hire & Drive (Motor)	0	0	2	2	0	0
COM Hire & Drive (PWC)	3	3	0	3	1	0
COM Hire & Drive (Sail)	0	3	0	0	0	1
COM Hire & Drive (Speed)	1	0	0	0	0	1
COM Houseboat	0	1	0	0	0	0
COM Hovercraft	0	0	0	0	0	0
COM Motorboat	0	0	1	0	0	2
COM Non-passenger	2	11	1	5	1	2
COM Other	7	3	1	5	3	1
COM Passenger	11	16	11	8	9	5
COM PWC (jetski)	1	1	1	0	0	0
COM Sailboat	7	0	0	0	1	0
COM Speedboat	5	7	5	6	0	0
REC Houseboat	2	1	0	1	0	1
REC Motorboat	5	4	6	5	2	4
REC Other	0	0	2	1	0	0
REC Paddle (row) boat	0	0	1	1	0	1
REC PWC (jetski)	8	10	4	4	1	13
REC Sailboat	3	4	2	4	5	3
REC Speedboat	16	18	6	17	11	8
Total number of ships	**77**	**92**	**49**	**72**	**37**	**50**

Table 13 Visibility in fatal and serious injury incidents 1999 - 2004 and year 2004 by region

Visibilty	1999	2000	2001	2002	2003	2004	GC	BN	GL	MK	TV	CN
Not specified	9	13	5	14	5	11	0	7	4	0	0	0
Poor	1	3	3	2	1	2	0	1	0	1	0	0
Fair	8	12	3	2	2	9	2	1	0	0	1	5
Good	47	55	34	42	20	21	7	4	2	1	0	7
Fatality/serious injury incidents	**65**	**83**	**45**	**60**	**28**	**43**	**9**	**13**	**6**	**2**	**1**	**12**

Table 14 Weather in fatal and serious injury incidents 1999 - 2004 and year 2004 by region

Weather	1999	2000	2001	2002	2003	2004	GC	BN	GL	MK	TV	CN
Not specified	7	14	5	10	4	12	0	7	4	0	0	1
Clear	46	46	32	40	20	24	9	4	2	2	1	6
Cloudy	5	16	6	4	3	2	0	0	0	0	0	2
Flood	0	0	0	0	0	0	0	0	0	0	0	0
Hazy	1	2	1	1	0	4	0	1	0	0	0	3
Other	0	1	0	2	1	0	0	0	0	0	0	0
Rain	6	4	1	3	0	1	0	1	0	0	0	0
Fatality/serious injury incidents	**65**	**83**	**45**	**60**	**28**	**43**	**9**	**13**	**6**	**2**	**1**	**12**

Table 15 Wind in fatal and serious injury incidents 1999 - 2004 and year 2004 by region

Wind	1999	2000	2001	2002	2003	2004	GC	BN	GL	MK	TV	CN
Not specified	7	15	4	12	5	11	0	7	4	0	0	0
No wind	6	9	5	9	1	3	0	1	1	0	0	1
Light (up to force 2 / 1-7 knots)	25	22	22	16	7	14	6	2	0	1	1	4
Moderate (force 3-4 / 8-16 knots)	16	20	7	14	13	10	3	1	1	1	0	4
Strong (force 5-7 / 17-33 knots)	11	15	7	9	2	2	0	1	0	0	0	1
Gale (force 8 and above / more than 33 knots)	0	2	0	0	0	3	0	1	0	0	0	2
Fatality/serious injury incidents	**65**	**83**	**45**	**60**	**28**	**43**	**9**	**13**	**6**	**2**	**1**	**12**

Table 16 Environmental factors contributing to marine incidents 1999 - 2004 and year 2004 by region

Environmental factors	1999	2000	2001	2002	2003	2004	GC	BN	GL	MK	TV	CN
Abnormal tidal conditions	17	7	15	5	4	8	0	2	0	3	1	2
Bar conditions	9	3	2	12	18	16	0	14	1	0	0	1
Floating or submerged object	24	25	17	11	7	18	3	6	4	3	0	2
Hazardous season (cyclones etc)	15	5	1	0	3	6	0	4	1	0	0	1
Hazardous waters - coral reefs	2	24	30	23	22	25	0	0	2	19	0	4
Hazardous waters - lack navigation aids	1	2	1	1	1	1	0	1	0	0	0	0
Hazardous waters - shifting channel	1	3	9	5	6	9	0	4	1	2	1	1
Hazardous waters - uncharted hazards	0	2	7	4	2	11	0	4	0	5	1	1
Heavy traffic area	5	5	2	7	3	6	1	3	0	0	0	2
Other environmental contributing factor	5	27	35	23	17	36	0	29	3	4	0	0
Poor visibility	18	16	16	16	10	15	0	6	1	4	2	2
Sea state	61	68	78	75	70	84	2	35	10	20	3	14
Wash of passing vessel	19	7	13	14	9	21	4	13	1	0	2	1
Wind	24	21	60	42	66	71	3	31	8	12	6	11
Total environmental factors attribution	**201**	**215**	**286**	**238**	**238**	**327**	**13**	**152**	**32**	**72**	**16**	**42**

Table 17 Human factors contributing to marine incidents 1999 - 2004 and year 2004 by region

Human factors	1999	2000	2001	2002	2003	2004	GC	BN	GL	MK	TV	CN
Alcohol or drugs	4	6	6	6	7	9	2	2	2	2	0	1
Commercial pressure	4	11	9	6	3	12	0	4	0	0	0	8
Excessive speed	21	15	17	16	10	21	3	12	2	0	1	3
Fatigue	8	4	9	2	6	5	0	0	1	1	0	3
Inadequate training of crew	6	14	20	13	13	13	1	2	5	0	0	5
Inappropriate Harbour/Port Authority advice	0	2	2	0	0	0	0	0	0	0	0	0
Inappropriate advice to ship - Pilot	4	0	0	2	0	2	0	0	0	0	2	0
Inappropriate Vessel Traffic System advice	0	0	1	1	0	0	0	0	0	0	0	0
Inappropriate instructions to crew - other	1	1	3	4	6	1	0	1	0	0	0	0
Poor communication of instructions to crew	0	3	4	4	1	3	0	0	1	0	0	2
Inattention	30	64	73	64	55	108	8	60	13	10	4	13
Insecure mooring	10	33	28	19	25	28	0	8	6	5	2	7
Insufficient crew numbers	1	0	1	0	1	5	1	3	0	0	0	1
Insufficient fuel	2	2	1	3	0	0	0	0	0	0	0	0
Insufficient maintenance	6	6	10	5	8	16	0	4	3	2	4	3
Insufficient planning	9	11	12	9	17	18	0	8	0	5	1	4
Navigation error-failure to keep proper lookout	33	17	37	25	45	65	3	21	3	30	4	4
Navigation error-lack of knowledge/experience	58	33	36	14	37	38	0	14	7	12	2	3
Navigation error-other	33	29	37	24	20	41	3	7	2	17	5	7
Navigation error-violation of Collision regs	15	5	22	13	20	44	4	28	4	4	1	3
Operational error-other	45	66	122	118	133	122	19	32	14	34	9	14
Overloading	0	2	4	0	1	0	0	0	0	0	0	0
Poor communications	3	3	6	7	1	10	0	3	2	1	2	2
Poor ship to shore communications	0	0	2	2	3	2	0	2	0	0	0	0
Violation of standard procedures	3	1	26	16	22	19	0	4	2	8	0	5
Violation of statutory rules or standards	7	9	21	22	16	31	6	12	1	8	0	4
Total human factors attribution	**303**	**337**	**509**	**395**	**450**	**613**	**50**	**227**	**68**	**139**	**37**	**92**

Table 18 Material factors contributing to marine incidents 1999 - 2004 and year 2004 by region

Material factors	1999	2000	2001	2002	2003	2004	GC	BN	GL	MK	TV	CN
Bridge or navigation failure	4	5	2	1	3	3	0	0	0	0	0	3
Electrical failure	3	9	19	13	9	12	1	5	2	2	0	2
Equipment failure - other	33	33	25	22	29	32	1	8	1	9	6	7
Fuel or gas leak	3	1	10	2	4	4	0	2	1	0	0	1
Hull failure	8	12	16	16	12	11	1	0	3	3	1	3
Inadequate stability - other	1	3	6	0	1	2	0	1	0	0	0	1
Inadequate stability - overloading	0	2	1	0	1	1	0	0	1	0	0	0
Inadequate stability - shifting cargo	0	0	1	1	2	1	0	0	1	0	0	0
Inappropriate hull or equipment-construction fault	0	2	5	6	1	2	0	0	0	0	0	2
Inappropriate hull or equipment-design fault	2	7	9	3	7	16	0	5	1	7	1	2
Insufficient maintenance of hull or equipment	12	10	6	5	3	7	0	2	3	1	0	1
Insufficient safety equipment	0	0	0	5	2	2	0	0	1	0	0	1
Machinery failure	25	25	41	47	49	53	4	17	14	6	3	9
Other material contributing factor	14	36	32	28	22	39	1	30	3	4	0	1
Shore structure badly designed/maintained	5	4	4	5	4	4	0	0	0	0	3	1
Total material factors attribution	**110**	**149**	**177**	**154**	**149**	**189**	**8**	**70**	**31**	**32**	**14**	**34**

Table 19 Incident type 1999 - 2004 and year 2004 by region

Incident type	1999	2000	2001	2002	2003	2004	GC	BN	GL	MK	TV	CN
Capsizing	11	19	16	14	13	13	0	5	5	3	0	0
Capsizing flooding	5	5	12	7	8	7	0	1	2	2	1	1
Capsizing sinking	23	19	23	29	21	28	5	6	4	3	2	8
Capsizing swamping	27	17	22	31	40	37	8	16	7	4	0	2
Collision between ships	138	121	119	119	125	127	32	45	10	26	5	9
Collision with a fixed object	38	37	36	42	35	42	2	21	3	3	1	12
Collision with an animal	0	0	1	2	2	2	0	0	1	0	0	1
Collision with floating object	6	12	7	11	8	11	2	1	2	2	2	2
Collision with overhead obstruction	0	3	0	2	0	1	0	1	0	0	0	0
Collision with submerged object	18	24	15	18	18	21	4	5	4	5	1	2
Collision with wharf	16	13	20	18	22	21	0	7	2	2	8	2
Explosion	2	2	5	1	1	2	0	1	1	0	0	0
Fire	22	18	28	17	31	25	3	7	6	3	1	5
Grounding intentional	3	10	2	2	2	2	0	2	0	0	0	0
Grounding unintentional	93	127	115	94	125	120	2	16	14	58	12	18
Loss of ship	10	23	1	7	13	1	0	0	0	1	0	0
Loss of stability	1	0	3	0	2	2	0	2	0	0	0	0
Onboard incident crushing or pinching	8	5	1	5	5	6	0	2	1	1	0	2
Onboard incident falls within ship	17	9	19	18	19	13	4	3	1	2	2	1
Onboard incident other onboard injury	12	20	15	10	10	8	0	2	2	4	0	0
Other	51	29	11	63	43	27	6	8	6	2	4	1
Other - Close Call	5	29	40	50	29	43	3	19	3	4	3	11
Other - Crime Issue	1	1	10	2	1	1	0	0	0	0	0	1
Other - Ship Adrift	0	6	20	10	12	6	0	4	1	0	0	1
Other personal injury caused by operation of ship	5	10	7	18	10	12	0	6	2	1	1	2
Other personal injury diving incident	1	3	1	2	2	1	0	1	0	0	0	0
Other personal injury hit by propellor or ship	1	3	5	6	10	5	1	1	0	1	0	2
Other personal injury parasailing incident	1	0	1	2	0	0	0	0	0	0	0	0
Other personal injury water ski incident	8	10	8	5	4	4	1	3	0	0	0	0
Person overboard	22	21	25	24	19	18	1	7	4	4	0	2
Structural failure	8	16	22	21	15	12	3	4	0	2	1	2
All incidents	**553**	**612**	**610**	**650**	**645**	**618**	**77**	**196**	**81**	**133**	**44**	**87**

Table 20 Location of incidents 1999 - 2004 and year 2004 by region

Location	1999	2000	2001	2002	2003	2004	GC	BN	GL	MK	TV	CN
Not specified	8	7	1	1	4	0	0	0	0	0	0	0
Inland waters	130	108	102	101	78	71	17	40	6	2	2	4
Offshore	72	114	115	138	129	123	12	40	20	15	11	25
Partially smooth waters	234	160	151	153	190	153	4	21	21	80	9	18
Smooth waters	109	223	241	257	244	271	44	95	34	36	22	40
All incidents	**553**	**612**	**610**	**650**	**645**	**618**	**77**	**196**	**81**	**133**	**44**	**87**

Table 21 Incidents by month 1999 - 2004 and year 2004 by region

Month	1999	2000	2001	2002	2003	2004	GC	BN	GL	MK	TV	CN
January	48	66	59	60	54	60	6	25	9	13	1	6
February	43	49	40	55	40	53	10	19	7	7	3	7
March	46	52	58	57	57	52	8	19	3	16	2	4
April	52	64	54	58	47	57	9	26	8	6	2	6
May	47	49	38	46	47	50	3	14	11	10	5	7
June	47	40	50	63	60	51	6	12	5	17	6	5
July	44	61	48	37	54	44	5	14	3	8	7	7
August	45	60	66	48	61	48	2	16	8	4	6	12
September	43	47	42	61	43	48	5	11	2	15	5	10
October	47	52	51	58	66	59	7	15	9	16	4	8
November	42	34	58	52	61	49	6	12	10	14	1	6
December	49	38	46	55	55	47	10	13	6	7	2	9
All incidents	**553**	**612**	**610**	**650**	**645**	**618**	**77**	**196**	**81**	**133**	**44**	**87**

Table 22 Incidents 1999 - 2004 by region

Region	1999	2000	2001	2002	2003	2004
Gold Coast	1	73	75	79	77	77
Brisbane	221	179	198	198	192	196
Gladstone	89	94	76	87	97	81
Mackay	131	119	128	123	135	133
Townsville	45	46	51	59	49	44
Cairns	66	101	82	104	95	87
Region not advised	0	0	0	0	0	0
All incidents	**553**	**612**	**610**	**650**	**645**	**618**

Table 23 Damage category 1999 - 2004 and year 2004 by region

Damage	1999	2000	2001	2002	2003	2004	GC	BN	GL	MK	TV	CN
Not specified	1	0	1	2	4	0	0	0	0	0	0	0
Damage to Property Only	66	53	51	68	68	70	12	18	8	12	10	10
No Damage	176	217	226	272	245	204	18	75	21	44	16	30
Ship Damaged	222	291	285	268	295	310	43	96	41	71	18	41
Ship Lost	32	51	47	40	33	34	4	7	11	6	0	6
All incidents	**497**	**612**	**610**	**650**	**645**	**618**	**77**	**196**	**81**	**133**	**44**	**87**

Table 24 Incidents by time of day 1999 - 2004 and year 2004 by region

Time of day	1999	2000	2001	2002	2003	2004	GC	BN	GL	MK	TV	CN
Not specified	18	51	22	41	35	41	1	13	14	5	2	6
Dawn	35	19	22	26	26	23	3	13	0	1	2	4
Day	354	382	386	410	417	385	59	123	40	91	23	49
Dusk	31	34	58	59	55	43	6	14	7	7	2	7
Night	115	126	122	114	112	126	8	32	20	29	16	21
All incidents	**553**	**612**	**610**	**650**	**645**	**618**	**77**	**195**	**81**	**133**	**45**	**87**

Table 25 No. of ships in incidents 1999 - 2004 by ship type

Ship type	1999	2000	2001	2002	2003	2004
COM Fishing	94	101	92	88	88	91
COM Hire & Drive	2	0	0	0	0	0
COM Hire & Drive (House)	3	4	4	1	0	1
COM Hire & Drive (Motor)	7	8	10	10	11	3
COM Hire & Drive (Other)	0	0	2	0	1	3
COM Hire & Drive (PWC)	7	7	5	2	2	1
COM Hire & Drive (Sail)	27	43	46	30	48	49
COM Hire & Drive (Speed)	1	2	0	0	1	3
COM Houseboat	8	7	11	11	8	15
COM Hovercraft	0	0	0	0	0	0
COM Motorboat	5	11	8	6	6	5
COM Non-passenger	14	67	29	69	93	52
COM Other	113	46	66	89	48	54
COM Paddle (row) boat	0	1	0	3	0	1
COM Passenger	112	126	161	137	162	126
COM PWC (jetski)	6	6	9	10	11	7
COM Sailboat	47	8	15	14	20	26
COM Speedboat	16	8	12	22	14	12
REC Houseboat	8	7	9	5	8	7
REC Motorboat	41	60	66	71	85	85
REC Other	15	16	30	34	16	17
REC Paddle (row) boat	0	5	2	3	4	6
REC PWC (jetski)	26	27	17	21	11	23
REC Sailboat	86	94	59	86	101	74
REC Speedboat	82	84	56	69	75	71
Not specified	6	10	32	51	5	41
Unknown ship type	10	3	10	10	0	3
Total number of ships	**736**	**751**	**751**	**842**	**818**	**776**

Table 26 Visibility in incidents 1999 - 2004 and year 2004 by region

Visibility	1999	2000	2001	2002	2003	2004	GC	BN	GL	MK	TV	CN
Not specified	67	89	33	92	89	92	3	50	19	4	5	11
Poor	53	64	61	50	52	45	1	17	6	10	2	9
Fair	73	96	112	67	70	72	8	15	10	18	7	14
Good	360	363	404	441	434	409	65	114	46	101	30	53
All incidents	**553**	**612**	**610**	**650**	**645**	**618**	**77**	**196**	**81**	**133**	**44**	**87**

Table 27 Weather in incidents 1999 - 2004 and year 2004 by region

Weather	1999	2000	2001	2002	2003	2004	GC	BN	GL	MK	TV	CN
Not specified	56	67	31	72	71	60	3	35	14	1	2	5
Clear	347	364	427	447	414	422	66	122	50	91	34	59
Cloudy	55	83	72	63	90	67	6	14	11	25	2	9
Flood	0	3	1	0	1	2	0	0	0	1	0	1
Hazy	7	15	16	27	19	17	1	2	1	4	3	6
Other weather	10	12	8	7	4	8	0	3	1	4	0	0
Rain	78	68	55	34	46	42	1	20	4	7	3	7
All incidents	**553**	**612**	**610**	**650**	**645**	**618**	**77**	**196**	**81**	**133**	**44**	**87**

Table 28 Wind in incidents 1999 - 2004 and year 2004 by region

Wind	1999	2000	2001	2002	2003	2004	GC	BN	GL	MK	TV	CN
Not specified	65	62	37	69	63	61	3	40	10	1	2	5
No wind	32	57	47	57	49	42	8	19	5	7	0	3
Light (up to force 2 / 1-7 knots)	140	168	217	196	176	199	38	50	25	38	12	36
Moderate (force 3-4 / 8-16 knots)	185	172	186	209	228	168	20	45	18	47	16	22
Strong (force 5-7 / 17-33 knots)	116	130	104	107	122	124	7	33	21	35	14	14
Gale (force 8 and above / more than 33 knots)	15	23	19	12	7	24	1	9	2	5	0	7
All incidents	**553**	**612**	**610**	**650**	**645**	**618**	**77**	**196**	**81**	**133**	**44**	**87**

Table 29 Boating incidents 1999 - 2004 by region

Region	1999	2000	2001	2002	2003	2004
South East Queensland	1769	1845	n/a	n/a	n/a	n/a
Gold Coast	n/a	n/a	927	874	878	988
Brisbane	n/a	n/a	768	1005	1175	1045
Gladstone	356	480	335	395	388	363
Mackay	65	40	68	17	7	124
Townsville	114	151	111	122	104	129
Cairns	147	216	160	146	145	194
Annual totals	**2451**	**2732**	**2369**	**2559**	**2697**	**2843**

Table 30 Boating incidents by callout reason 2004 by region

Region	Breakdown	Grounding	Sinking	Fuel	Not Specified	Drifting	Search	Medical	EPIRB	Flares
Brisbane	531	76	62	49	68	52	71	18	9	4
Cairns	115	9	14	10	8	18	10	0	7	1
Gladstone	206	27	17	28	22	13	15	8	2	3
Gold Coast	635	102	70	39	31	37	13	9	0	0
Mackay	42	6	2	7	4	3	2	3	0	0
Townsville	81	10	4	16	0	3	7	1	0	1
Callout reason totals	**1610**	**230**	**169**	**149**	**133**	**126**	**118**	**39**	**18**	**9**

Table 31 Commercial and recreational registrations 1999-2004 by region

Recreational registrations						
Region	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Gold Coast	17544	18695	20130	22052	23813	25641
Brisbane	66986	70310	74018	75514	78798	82634
Gladstone	23430	24391	25826	29270	31018	32980
Mackay	10055	10417	11046	12632	13270	14077
Townsville	13610	14154	14989	16618	17141	17627
Cairns	14693	15570	16143	15829	16264	16874
Totals	**146318**	**153537**	**162152**	**171915**	**180304**	**189833**

Commercial registrations						
Region	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Gold Coast	728	727	727	763	825	891
Brisbane	1585	1569	1596	1580	1636	1654
Gladstone	768	744	752	778	777	790
Mackay	700	711	751	765	776	760
Townsville	480	473	466	485	468	467
Cairns	1074	1105	1123	1178	1165	1186
Totals	**5335**	**5329**	**5415**	**5549**	**5647**	**5748**

Total registrations						
Region	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Gold Coast	18272	19422	20857	22815	24638	26532
Brisbane	68571	71879	75614	77094	80434	84288
Gladstone	24198	25135	26578	30048	31795	33770
Mackay	10755	11128	11797	13397	14046	14837
Townsville	14090	14627	15455	17103	17609	18094
Cairns	15767	16675	17266	17007	17429	18060
Totals	**151653**	**158866**	**167567**	**177464**	**185951**	**195581**