

Marine incidents IN QUEENSLAND

June 2007



2006



Queensland
Government

Maritime Safety
Queensland

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**Marketing and Education Unit
Maritime Safety Queensland**

Level 26 Mineral House
41 George Street
Brisbane Queensland 4000

GPO Box 2595
Brisbane Queensland 4001

Facsimile: 07 3120 7494

E-mail: maritime.safety@msq.qld.gov.au

Web: www.msq.qld.gov.au

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or by e-mail at maritime.safety@msq.qld.gov.au

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Director General's Foreword

As Director-General of Queensland Transport, I am pleased to formally report on Queensland's marine safety performance in 2006, as measured by marine incident numbers and outcomes.

Unfortunately 2006 saw a significant increase in both reported marine incident numbers and the number of fatalities resulting from these incidents.

While it is hoped that the unusually high number of fatalities in 2006 represents an aberration only, this is not guaranteed. We therefore need to be even more attentive to opportunities to improve boating safety and reduce the numbers of fatalities and serious injuries resulting from marine incidents.



Maritime Safety Queensland has been working closely with industry and interstate marine safety colleagues in developing nationally consistent boating safety policies, standards and initiatives that will deliver safety improvements not just in 2007 but for decades to come.

Some of the more notable recent initiatives include the introduction of mandatory competency-based recreational boat licence training and assessment, the introduction of mandatory lifejacket wearing requirements, the commencement of the Torres Strait Marine Safety Program and the continuing implementation of a suite of nationally-uniform commercial vessel safety standards.

Throughout 2006 Maritime Safety Queensland has continued its work of encouraging and fostering safety as a core value and culture within the commercial, fishing and recreational sectors of the boating industry and community. As challenging as this is, it is certainly worth pursuing, particularly in the light of ever-increasing vessel numbers, associated on-water congestion, expanding marine and eco-tourism markets in Queensland and the expanding development of waterfront residential precincts.

It is pleasing to be able to publish such a comprehensive set of statistics on marine incidents in Queensland. The report, *Marine Incidents in Queensland 2006*, enables a better understanding of why and how incidents occur on our waterways and informs decisions about future maritime safety initiatives.

Maritime Safety Queensland is not alone in carrying the responsibility for driving and maintaining Queensland's marine safety performance. This is a joint effort between a range of maritime stakeholders and interested parties.

I would once again like to extend my thanks to Maritime Safety Queensland's partner agencies, the Queensland Water Police and the Queensland Boating and Fisheries Patrol for their assistance and support throughout 2006. These two agencies are in many respects our front line in ensuring the safety of boating on Queensland's myriad of waterways. I look forward in 2007 to continued cooperation between Maritime Safety Queensland, commercial, fishing, and recreational boating communities and our partner agencies to make boating on our waterways both safe and enjoyable.

A handwritten signature in black ink, which appears to read 'Bruce Wilson'. The signature is fluid and cursive.

Bruce Wilson
Director General
Queensland Transport





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Year in review

Queensland's water transport fatality rate per million of population fell by nearly 45 per cent from 1.83 in 2000 to 2004 to 1.01 in 2005, according to the most recently available Australian Bureau of Statistics (ABS) data. The overall Australian water transport fatality rate for the same periods fell from 2.03 to 1.23 fatalities per million of population.

Despite Queensland's continuous improvement in marine safety outcomes in recent decades, the state recorded a significant increase in both the number of reported marine incidents and associated fatalities in 2006. It is not clear whether the increase in reported incident numbers is primarily the result of improved reporting of marine incidents or whether it represents a general increase in the number of incidents occurring.

While it is hoped that the unusually high number of marine incident fatalities in 2006 represents an aberration only, this is not guaranteed.

By way of a snapshot for the calendar year 2006:

- 701 marine incidents were reported in Queensland—an increase of nearly 8.7 per cent on the number of reported incidents in 2005 and the previous four-year average of 646.5.
- The most frequently reported types of marine incidents were collisions between ships (134) and unintentional groundings (116).
- 47 incidents were reported as resulting in fatalities or serious injuries—seven less than in 2005, but in line with the previous four-year average of 46.75 reported fatal and serious injury incidents.
- There were 17 recorded fatalities—four more than in 2005. This fatality outcome is significantly higher than the previous four-year average of 10.5 fatalities per annum.
- 16 of the 17 persons fatally injured ended up in the water as an outcome of the incidents they were involved in.
- 11 people died in incidents involving recreational vessels. These incidents included three double fatalities. A further six people died in incidents involving commercial vessels.
- 36 people suffered serious injuries requiring hospitalisation in 2006—12 fewer than in 2005 and significantly below the previous four-year average of 53.5 reported serious injuries per annum.
- There were an abnormally high number of fatalities and serious injuries recorded in the Cairns region in 2006. The region recorded 41 per cent of the state's fatalities and 25 per cent of the state's serious injuries for 2006.
- The most prevalent incidents involving fatal and serious injuries in 2006 were those where a person was hit by a vessel or the vessel's propeller. Nine such incidents resulted in one fatality and eight persons hospitalised.
- Looking at incidents resulting in fatalities the most prevalent incident type in 2006 was person overboard. Six people lost their lives in person overboard incidents.
- 20 of the 47 reported fatal and serious injury incidents occurred in offshore waters—up by more than 40 per cent on the four-year average involvement.
- Personal water craft (PWC) did not feature greatly in reported marine incidents in 2006. There were 29 incidents reported as involving PWCs and three recorded serious injuries from these incidents.
- Commercial fishing statistically is one of Australia's most dangerous occupations. Based on the 2006 marine incident data commercial fishing continues to present a significant marine safety challenge for Queensland. Maritime Safety Queensland is working closely with the commercial fishing industry to improve the safety of commercial fishers.





1. Introduction

1.1 Why report on marine incidents?

According to a national study of marine fatalities commissioned by the National Marine Safety Committee, boating fatalities and serious injuries cost the Australian community in excess of \$350 million annually (O'Connor, 2004). This report provides an objective assessment of the condition of Queensland's maritime safety environment as reflected by the number and nature of reported marine incidents for the year 2006. 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 What are marine incidents?


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.*

This report looks particularly closely at marine incidents involving fatalities and serious injuries. Serious injury incidents are marine incidents in which a person involved in the incident suffered any injury requiring actual admission to hospital.

1.3 Marine incident data management

Section 125 of the Act requires marine incidents to be reported to Maritime Safety Queensland. All reported incidents are examined to some degree—with more serious incidents undergoing more comprehensive investigation by trained investigators. Certain data from marine incident reports and subsequent investigation reports is recorded in Maritime Safety Queensland's marine incident data management system (Caseman). The data elements recorded are largely consistent with a 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 marine incident data set requirements.



The analyses included in this report draw on data from ‘reported’ marine incidents. While the level of reporting of marine incidents, particularly fatality incidents, is generally considered robust, there is an acknowledged level of underreporting of marine incidents in any given year. Anecdotal evidence suggests that under-reporting may be more prevalent in relation to incidents occurring in remote areas such as the Torres Strait and to incidents involving certain types of vessels such as jet skis. Maritime Safety Queensland continues to look for ways to improve the reporting of incidents by the boating public.

Some incidents occurring in the maritime environment fall outside the scope of the earlier definition of a marine incident. These include incidents such as workplace health and safety incidents that are not directly related to the operation of a vessel, collisions involving international trading vessels that are covered for reporting and investigation purposes under the *Navigation Act 1912 (Cwealth)* and incidents involving death from natural causes. To present a fuller picture of safety outcomes within the maritime environment in Queensland, Maritime Safety Queensland maintains information on any out-of-scope incidents involving a fatality that come to its attention. A brief review of out-of-scope fatal incidents is included later in this report.

1.4 What’s in the report?

The focus of the report is on reported marine incidents as a measure of public safety in the maritime environment. The report identifies the most frequently occurring incident types and their characteristics. It also identifies those incident types and characteristics showing significant change in 2006. This information provides a sound basis for determining priorities and shaping future maritime safety strategies and initiatives.

The report includes a high-level comparative analysis of interstate water transport fatality rates 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. Specific 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. FSI incidents carry a significantly higher social cost for the people concerned and 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 also focuses on selected attributes of marine incidents for more detailed analysis. Interspersed among these selected profiles are a series of incident case studies. These studies outline recent marine incidents that occurred in Queensland, highlighting 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 many characteristics of reported marine incidents are included in the Appendix to the report.

Unless otherwise stated, all the data presented in the report is sourced from Maritime Safety Queensland’s Caseman marine incident data management system.

The aim in this and future reports is to accurately present the major features of marine incidents in Queensland, to identify areas where strategies and initiatives have had an impact and 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.



It should also be noted that when disaggregated, incident, fatality and serious injury numbers are frequently small and random variations can appear large particularly when expressed in percentage terms. 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.

1.5 Marine boards of inquiry

Under section 131 of the *Transport Operations (Marine Safety) Act 1994*, the Minister may establish or re-establish a board of inquiry about a marine incident.

The board of inquiry must inquire into the circumstances and probable causes of the relevant marine incident. At the completion of the inquiry the board must give the Minister a written report outlining the board's findings. The Minister is required to table a copy of the report in Queensland's Legislative Assembly within 14 days of receiving the report.

There were no boards of inquiry convened into marine incidents in 2006.

2.0 Marine incidents in Queensland

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 level of underreporting of marine incidents in any given year. Maritime Safety Queensland continues to look for ways to improve compliance with statutory incident reporting requirements.

2.1 Reported marine incidents

In 2006, 701 marine incidents were reported in Queensland—8.7 percent higher than in 2005. The number of incidents reported in 2006 is also significantly higher than the previous four-year average number of reported marine incidents (646.5). 17 fatalities and 36 serious injuries were reported as resulting from 47 of the reported marine incidents in 2006.

2.2 Marine incidents by severity

In this section reported marine incidents in Queensland are analysed from the perspective of personal injury outcomes and property damage outcomes.

Figure 1 shows that total reported marine incidents in 2006 has increased when compared with the number reported in 2005. While the aggregate numbers of reported marine incidents over the past five years suggest an annual baseline in the low-to-mid six-hundreds, the number of reported incidents jumped significantly in 2006. It is not clear whether this is due to improved levels of reporting or whether it represents a spike in incident occurrence. As mentioned earlier, there is an acknowledged level of underreporting of marine incidents in any given year. Analyses in subsequent years will continue to monitor this aspect.

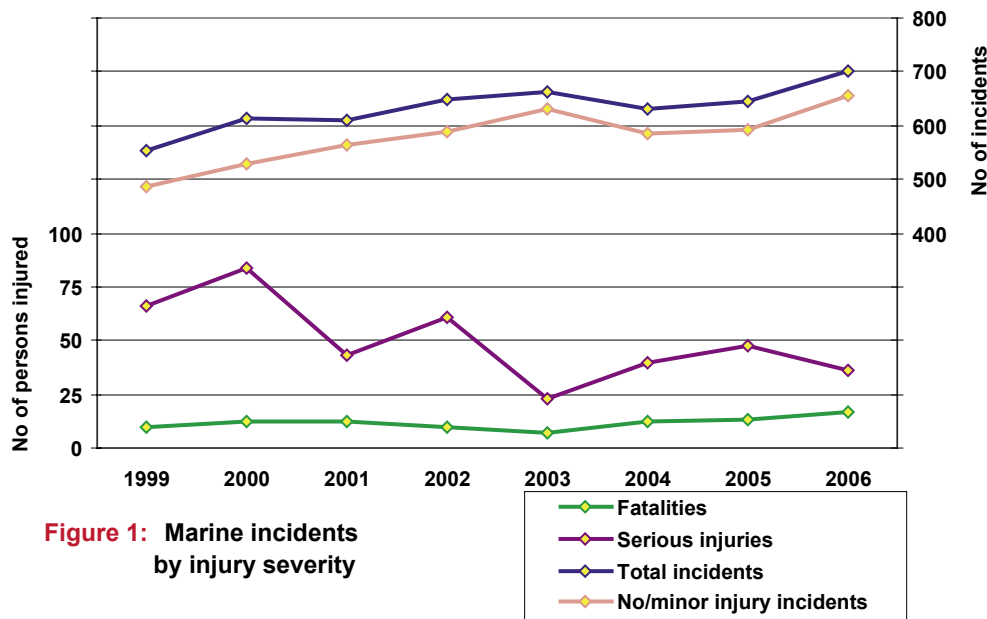


Figure 1: Marine incidents by injury severity

Figure 1 also shows reported marine incidents according to the severity of personal injury outcomes. Fatalities have risen from a low of seven in 2003 to 17 in 2006—significantly above the previous four-year average of 10.5 fatalities per year. Reported serious injuries fell in 2006 to 36 compared with 48 in 2005—below the previous four-year average of 43.

The second overall view of incident severity relates to property damage and loss. A range of property damage outcomes and their relative involvement in marine incidents between 1999 and 2006 is shown in Figure 2.

The numbers of incidents where vessels were deemed a total write-off/loss in terms of property damage in 2006 reversed the recent downwards trend. There were 48 incidents where vessels were lost in 2006—up by 41 per cent on the reported number of ship lost incidents in 2005 and well above the previous four-year average of 36 ship lost incidents per year.

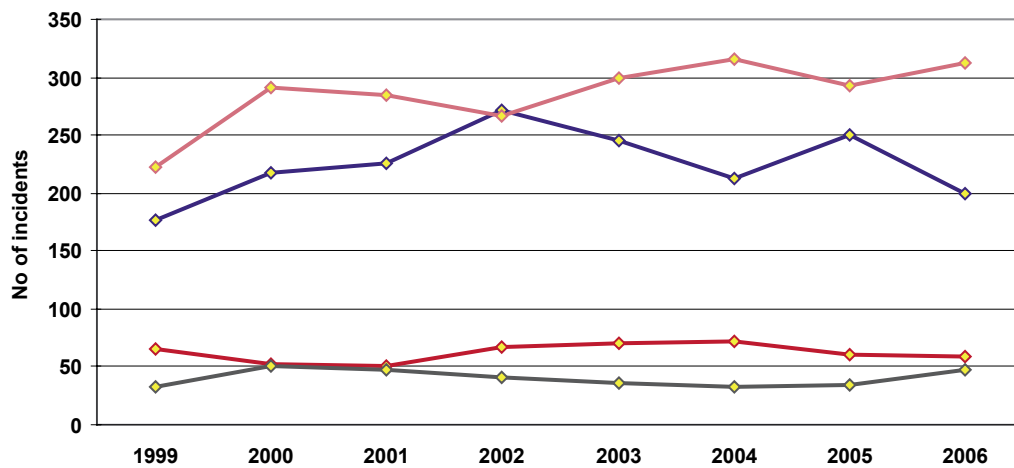


Figure 2: Marine incidents by severity of damage to vessel or property



Of the 48 vessels lost in 2006, 33 were recreational vessels and 15 were commercial vessels, including ten commercial fishing vessels.

The number of incidents that resulted in vessel damage increased from 292 in 2005 to 312 in 2006—marginally up on the previous four-year average of 293.25. There were 59 reported incidents where there was ‘damage to property only’ compared to 61 in 2005, below the previous four-year average of 67.5. The number of incidents in which there was no reported damage is down from 251 in 2005 to 199 in 2006—well below the previous four-year average of 244.75.

2.3 Marine incidents by region

The Brisbane region recorded the highest number of reported marine incidents (204) in 2006, while the Townsville region recorded the least number of reported incidents (42). Figure 3 shows proportionately the number of reported marine incidents according to the region in which the incidents occurred.

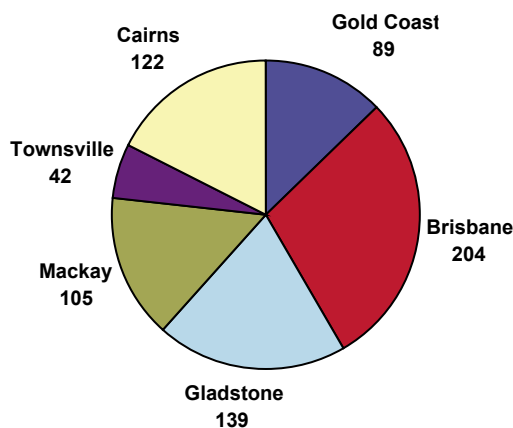
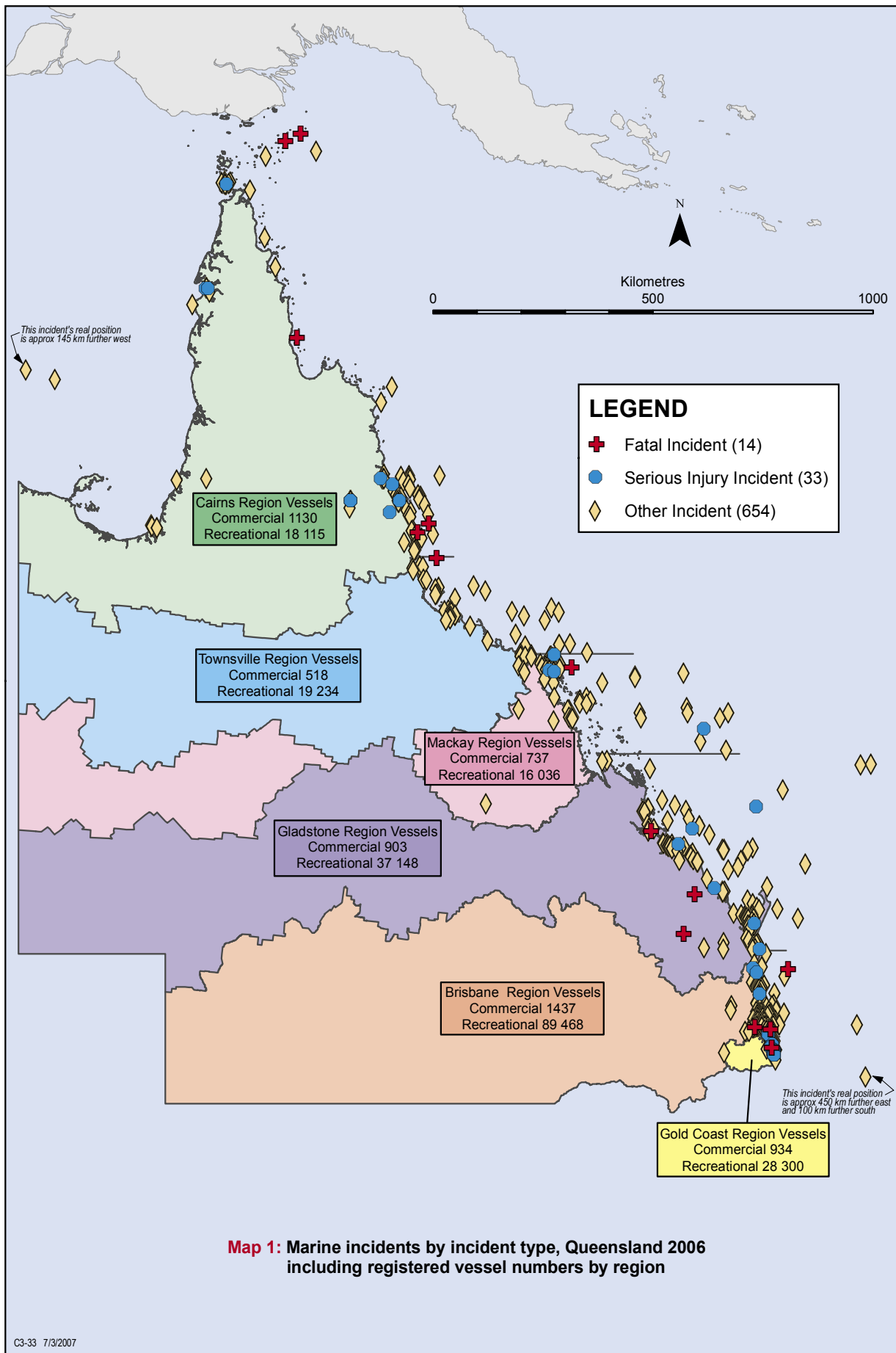


Figure 3: Marine incidents in 2006 - by region



Map 1: Marine incidents by incident type, Queensland 2006 including registered vessel numbers by region

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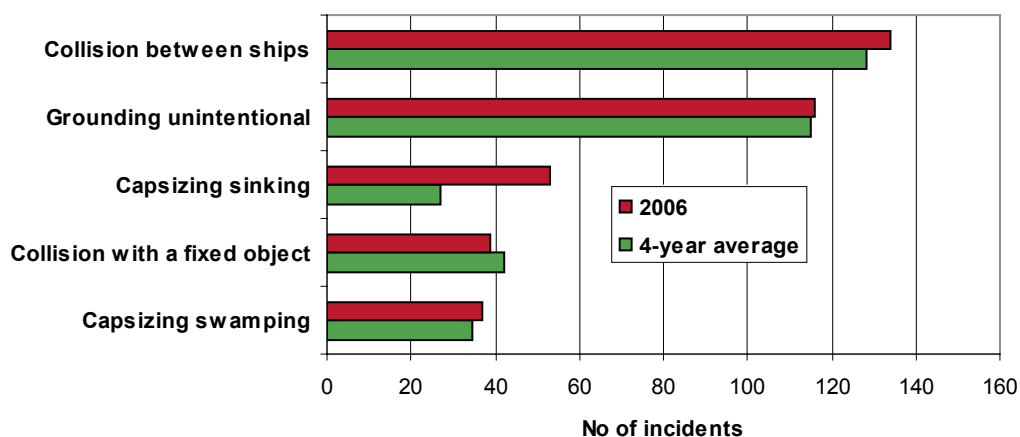
Map 1 shows spatially and by region where each of the reported marine incidents in 2006 occurred, together with the comparative numbers of commercially and recreationally registered vessels in each region.

2.4 Marine incidents by incident type

The five most frequently occurring types of marine incident reported in 2006 accounted for 379 (54 per cent) of all reported incidents (n=701). Figure 4 shows the top five incident types recorded in 2006 compared with their previous four-year average involvement.

The most significant incident types in 2006 were ‘collision between ships’ and ‘unintentional groundings’, with 134 and 116 reported incidents respectively. In 2006 ‘collisions between ships’ were marginally over-represented when compared with their previous four-year average involvement in reported marine incidents (128.25). ‘Unintentional grounding’ incidents were in line with their previous four-year average involvement in reported marine incidents.

Figure 4: Marine incidents in 2006 by incident type (Top 5)



Capsize incidents can be classified in four ways—capsize, capsize-sinking, capsize-flooding and capsize-swamping. ‘Capsize - sinking’ incidents showed a marked increase in 2006, with 53 incidents reported compared with 29 in 2005 and a previous four-year average of 26.75 incidents. Capsize incidents as a group have increased by 50.6 per cent in 2006—from 81 in 2005 to 122 in 2006. Capsize incidents are significantly over-represented when compared with a four-year average of 82.25.

2.5 Marine incidents by vessel type

Figure 5 shows the five vessel types that figured most frequently in reported marine incidents in Queensland in 2006 and their comparative representation since 1999. The top five vessel types account for 595 (66.3 per cent) of all the vessels involved in reported incidents in 2006 (n=898).

Four of the top five vessel types show increases in their involvement in marine incidents in 2006 compared to 2005. It is encouraging that commercial passenger ships (148) show a decrease in their involvement in marine incidents in 2006 compared to 2005 (161). Their involvement in 2006 is also below their previous four-year average involvement of 153.5.

Commercial fishing vessels (102) were appreciably over-represented when compared with their involvement in 2005 (69) and their previous four-year average involvement in marine incidents (87).

Likewise, recreational motorboats (122) were over-represented when compared with their involvement in 2005 (120) and their previous four-year average involvement in reported incidents (91.25). This may be in part to confusion about what is a recreational motorboat and what is a recreational speedboat. For registration purposes Queensland Transport defined a recreational speedboat as a powered recreational vessel capable of planing. A recreational motorboat is any powered vessel with

a displacement hull. It is evident that some people consider cabin cruisers and larger recreational vessels as motorboats when they may in fact be speedboats.

In terms of overall vessel involvement, commercial vessels accounted for 55.7 per cent of all vessels involved in incidents and recreational vessels made up 44.3 per cent of all vessels involved in incidents. This is generally in line with their proportionate involvement in 2005.

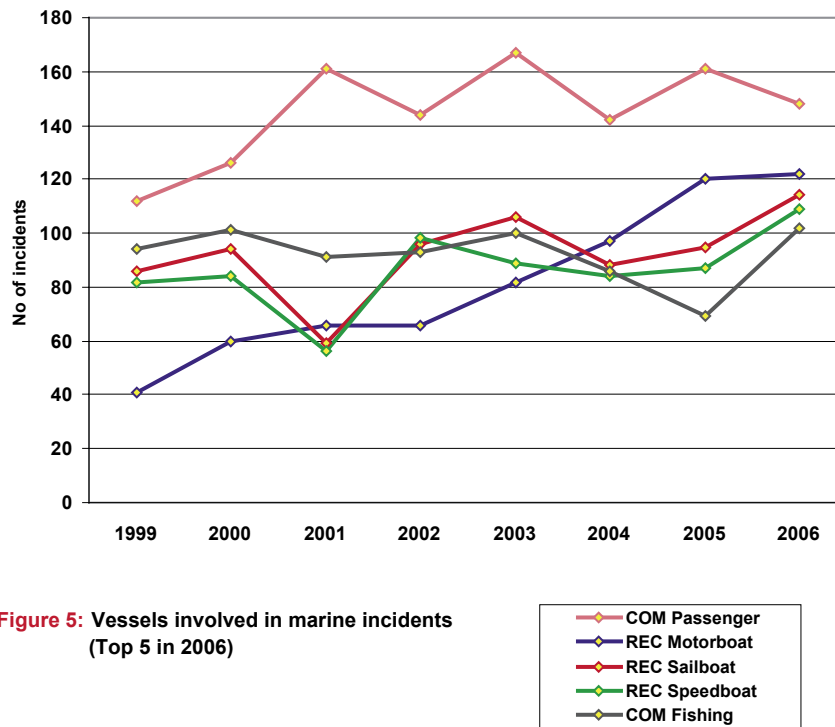


Figure 5: Vessels involved in marine incidents (Top 5 in 2006)

Recreational sailboats and recreational motorboats account for 25 per cent of all vessels involved in incidents and over 56 per cent of the recreational vessels involved in incidents respectively. New recreational licensing provisions requiring operators of any recreational vessel powered by an engine of more than 4.5kW to be licensed are expected to have a positive impact in the longer term on the involvement of recreational sailboats and motorboats.

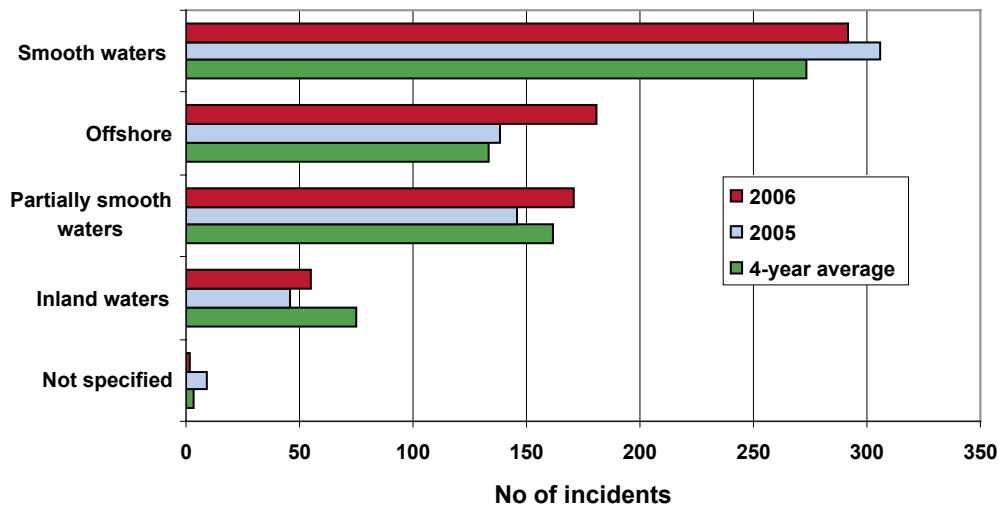
2.6 Marine incidents by location

292 (41.7 per cent) of the reported marine incidents in 2006 (n=701) occurred within smooth water limits. Incidents in offshore waters (181) were significantly over-represented when compared to 2005 (138) and a previous four-year average involvement of 133.5. Proportionately their representation rose from 21.4 per cent of incidents in 2005 to 25.8 per cent of incidents in 2006.

Incidents reported as occurring in inland waters and partially smooth waters also showed increases in their relative and absolute involvement in 2006. Figure 6 shows reported marine incidents in 2006 according to the location in which they occurred, compared with 2005 and the previous four-year average representation.



Figure 6: Marine incidents in 2006 - by location



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

- 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.

3.0 Queensland fatal marine incident trends

This section provides an analysis of fatal marine incidents in Queensland for 2006 in terms of past trends, and comparative trends in both population and registered vessel numbers.

3.1 Marine incident fatality trends

In 2006, there were 14 marine incidents that resulted in loss of life. 17 people died in these incidents, an increase of four over the 13 people who died in marine incidents in 2005. The 2006 fatality outcome is significantly over-represented when compared with the previous four-year average of 10.5 fatalities per year.

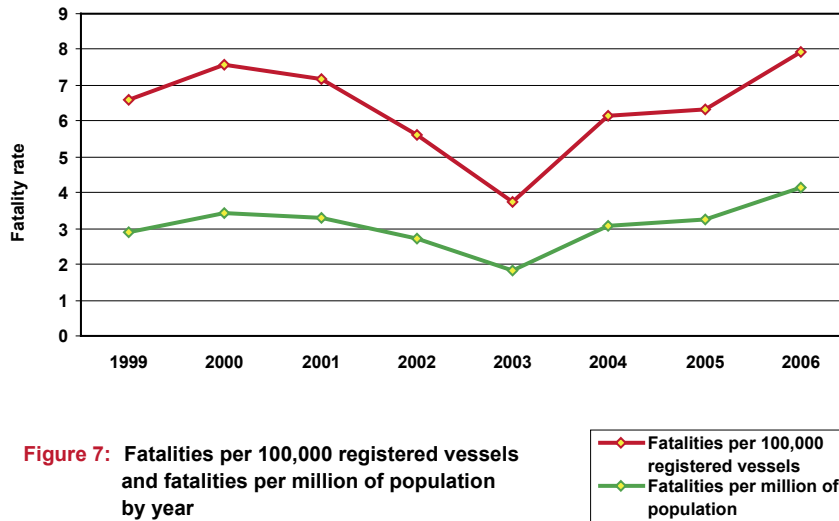


Figure 7: Fatalities per 100,000 registered vessels and fatalities per million of population by year

Figure 7 shows Queensland’s marine fatalities per million of population and per 100,000 registered vessels for the past eight years. In the absence of more specific exposure data, these surrogate measures provide objective measures for comparing marine fatality outcomes year by year. Fatality rates relative to both vessels on register and total population have continued an upward trend since 2003. This rise follows a three year period where fatality rates were trending downwards.

Figure 8 compares trends in Queensland marine fatalities with vessel registration, population and marine incident trends since 1997 (index 1997 = 100). The annual fatality trend after a relatively flat period has trended upwards since 2003—growing faster than the State’s population growth rate but still under the rate of growth in vessel ownership.

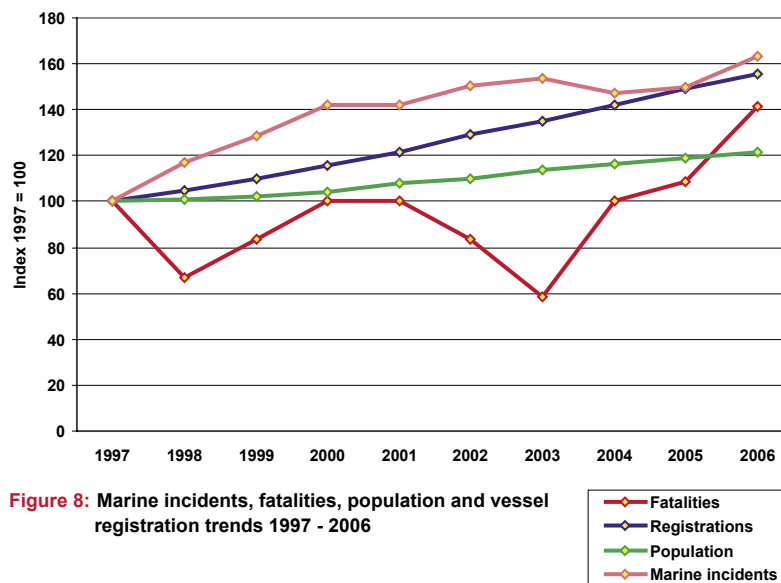


Figure 8: Marine incidents, fatalities, population and vessel registration trends 1997 - 2006



3.2 Profile of persons fatally injured

Of the 17 persons fatally injured in incidents in 2006, 16 were males and one was female. Eight of the deceased were the masters of the vessels involved, five were crew members and the remaining four were passengers. Figure 9 profiles the age and gender of the deceased. 59 per cent of those fatally injured were over 31 years of age and all but one were male. There were no children fatally injured in marine incidents in 2006.



Figure 9: Persons fatally injured in 2006 - by age and gender

3.3 Marine fatalities by vessel types

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

Figure 10 shows that 11 fatalities resulted from marine incidents involving recreational vessels in 2006—one more than the number recorded in 2005 and significantly above the previous four-year average of 6.25 recreational fatalities per annum. This compares with growth in registered recreational vessel numbers in 2006 of 4.60 per cent. The fatality rate per 100,000 registered recreational vessels continued to rise in 2006 following a significant increase in 2005—from a previous four-year average fatality rate of 3.33 deaths per 100,000 registered recreational vessels to 5.28 deaths per 100,000 registered recreational vessels in 2006.

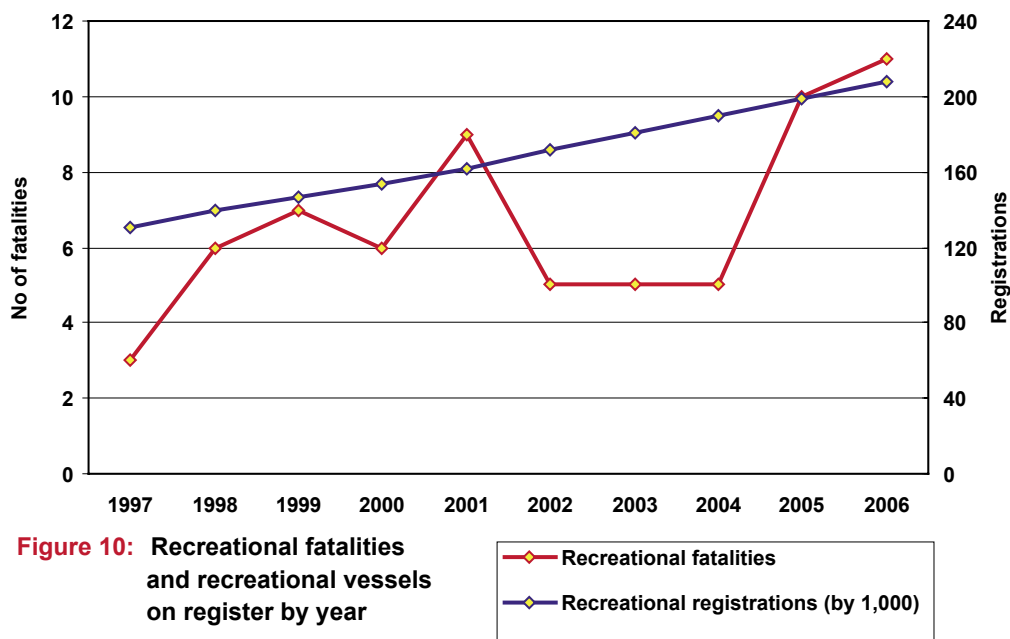


Figure 10: Recreational fatalities and recreational vessels on register by year

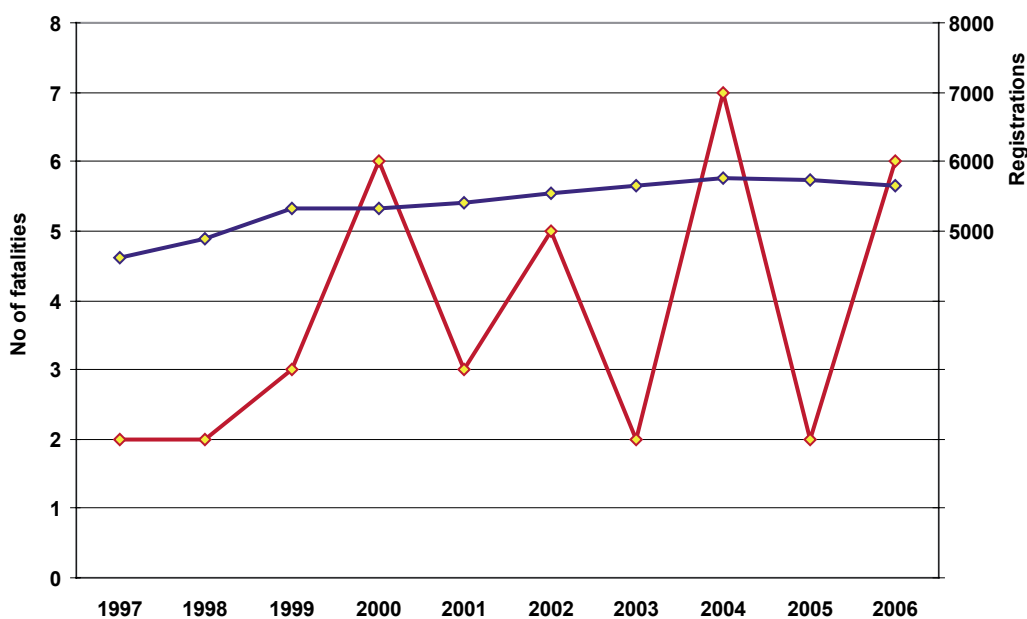
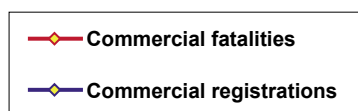


Figure 11: Commercial fatalities and commercial vessels on register by year



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 22.9 per cent over the period 1997 to 2006. Figure 11 shows there were six fatalities resulting from marine incidents involving commercial vessels in 2006. This represents a significant increase from the two commercial vessel fatalities recorded in 2005 and is well above the average of 4 commercial vessel fatalities per year for the previous four-year period. Five of the recorded commercial vessel fatalities in 2006 resulted from incidents involving commercial fishing vessels. The remaining commercial vessel fatality involved a commercial non-passenger vessel.

Of the 14 recorded fatal incidents, five involved commercial fishing vessels, four involved recreational speedboats, two involved recreational sailing vessels, two involved recreational motorboats and the remaining incident involved a commercial non-passenger vessel. The involvement of commercial fishing vessels in fatal incidents was a feature of the reported marine incidents in 2006. The involvement of commercial fishing ships in marine incidents is examined in more detail later in this report.

3.4 Marine fatalities by incident types

Looking at marine fatality incidents by their incident type, 13 of the incidents resulted in people in the water. Of these 13 incidents, six were person overboard incidents, four were capsized incidents, two involved collisions and one involved a person being hit by the vessel's propeller. 16 persons died in these 13 incidents. This highlights the potentially severe outcomes from incidents involving persons overboard or in the water, particularly if they are not wearing life jackets. Figure 12 shows the 14 fatal incidents according to their incident type.

3.5 Marine fatality incidents by location

In terms of fatal incident location, seven of the fatal incidents occurred in offshore water limits, four in smooth water limits, two in partially smooth water limits and one in inland waters.

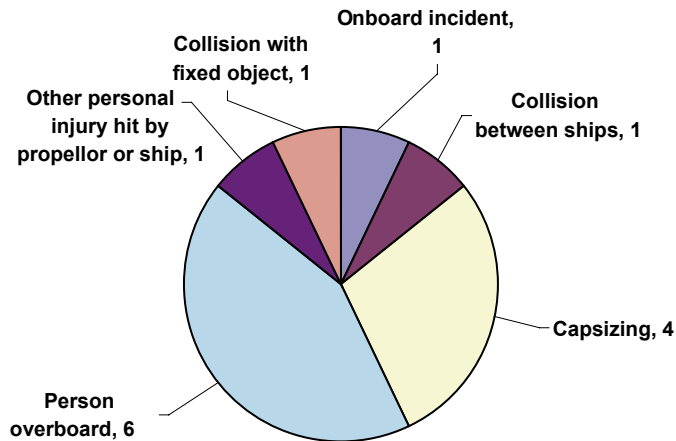


Figure 12: Fatal marine incidents in 2006 by incident type

3.6 Out-of-scope marine fatalities

Maritime Safety Queensland captures data on incidents which occur in the marine environment but are outside the scope of marine incidents as defined in the Act. These 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 wherever possible to ensure that any remedial action, including possible legislative changes, is taken. The data also enables the presentation of a more comprehensive picture of safety outcomes in the marine environment.

Figure 13 shows the number of known fatalities resulting from both in-scope and out-of-scope boating incidents in the marine environment for the period 2000 to 2006. Queensland’s combined marine fatalities, including known out-of-scope fatalities, were 22 in 2006. Out-of-scope marine fatality data was not recorded by Maritime Safety Queensland prior to 2000.

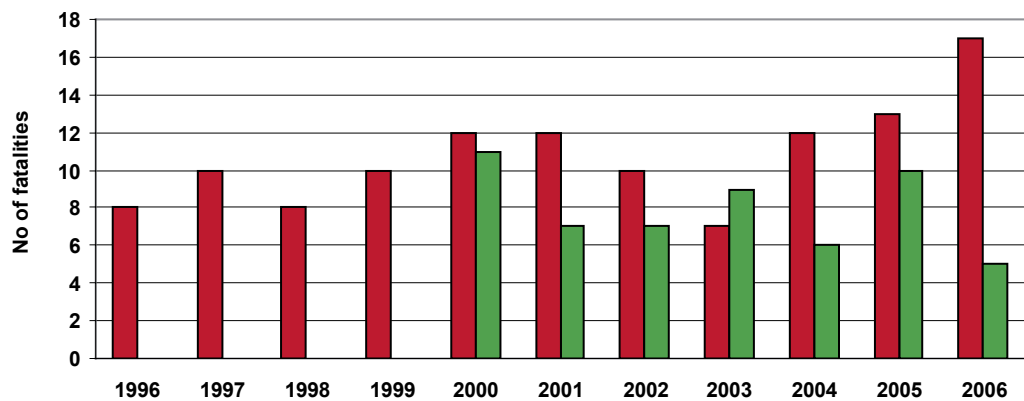
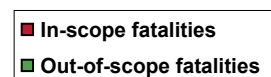


Figure 13: Fatalities in the marine environment



The five fatalities classified in 2006 as out-of-scope included the loss of:

- Three male tourists who died from heart attacks or other medical conditions while snorkelling or diving from commercial passenger/charter vessels.
- Two male recreational sailors who died after suffering heart attacks while aboard their vessels.

3.7 Marine fatality trends – Queensland in relation to Australia

To provide a broader view of Queensland’s relative maritime safety performance, the 2006 review again includes a comparison of Queensland’s water transport fatality involvement per million of population with that of other Australian states and territories—based on Australian Bureau of Statistics (ABS) data. While the ABS scope and definitions of water transport-related deaths may vary from those used by Maritime Safety Queensland for fatal marine incidents, the ABS data allows a nationwide comparison from a common point of reference. For example, the ABS data may include water transport deaths that do not strictly meet the ‘marine incident’ definition concerning the operation of a vessel. ABS data also is based on the year that coroners’ reports are registered, rather than the year in which a fatality may have occurred. Reconciling Maritime Safety Queensland’s annual fatality numbers with the ABS data is therefore not possible.

The ABS data does however resolve issues of historical data accuracy and comparability between individual jurisdictions’ maritime incident data collections and definitions. Figure 14 shows that over the past 30 years, all states and territories in Australia have generally shown marked improvements in marine fatality rates per million of population. Table 1 in the Appendix provides comparative interstate water transport death rates for the period 1976 to 2005.

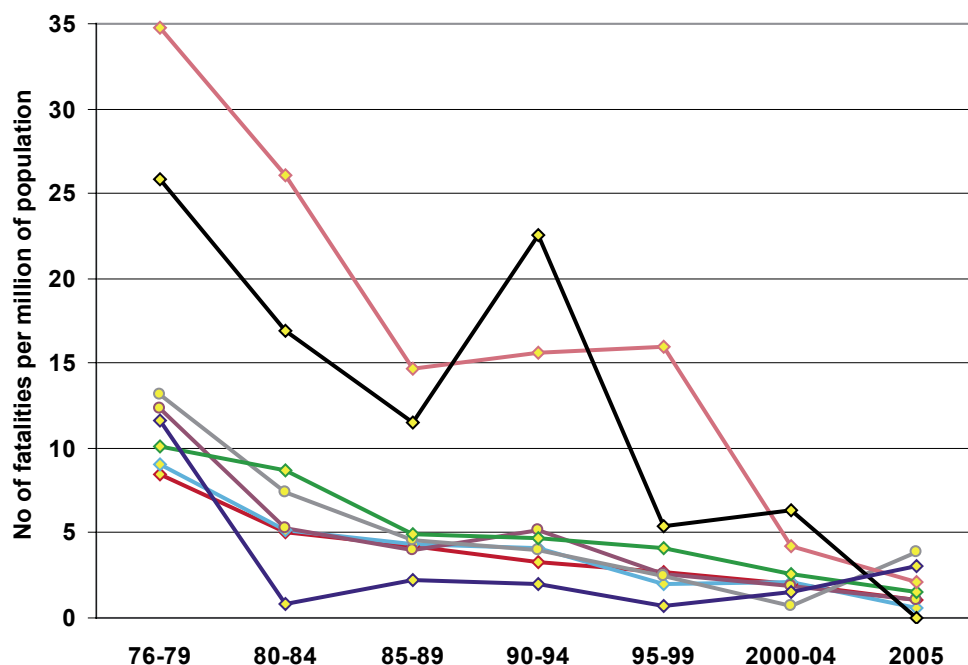


Figure 14: Marine fatalities per 1,000,000 persons by state and territory





During the period 1994 to 1999, the data shows that the Queensland water transport 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. In 2005, Queensland maintained its number three ranking with a water transport fatality rate of 1.01 per one million of population. This represents a fall of nearly 45 per cent over the previous five-year average of 1.83 fatalities per million of population. Comparatively, the water transport fatality rate per million of population for all of Australia for 2005 was 1.23. Coronial death data for the 2006 calendar year was not available from the ABS at the time of printing this report.

Over the last three decades numerous marine safety initiatives have been introduced both nationally and in Queensland, including:

- Compulsory boating safety equipment (National–1976)
- Introduction of annual recreational boating safety education campaigns (National–1978)
- Formal training courses for commercial marine licensing (National–1980)
- Voluntary training courses for recreational boating (1985)
- On-water random breath testing (1989)
- Introduction of electronic position indicating radio beacons (EPIRBs) (National–1992)
- Introduction of formal recreational boat licence training option (1993)
- Positive flotation for vessels (National–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)
- Commencement of major commercial boating industry 'safety culture' program (2004)
- Torres Strait Boating and Alcohol Program (2004)
- Extended recreational boat licensing requirements for displacement hull vessels (2005)
- A jet ski management plan including the introduction of mandatory jet ski licensing requirements (2005)
- Full implementation of the BoatSafe training and assessment scheme for recreational boat licensing (2005)
- Commencement of the *Transport Operations (Marine Safety—Examining and Training Program Approvals (Recreational Ships and Personal Watercraft)) Standard 2005*
- Full implementation of the jet ski licensing requirements (2006)
- National introduction of the Australian Builder's Plate for recreational vessels (2006)
- Formation of BoatSafe Training Association of Queensland (BTAQ) (2006)
- Commencement of BoatSafe Statewide Compliance Audit Program (2006)
- Commencement of fishing ship safety equipment trials (2006)
- Commencement of competency-based training and assessment pilot program for Master Class 5 commercial marine licence (2006)
- Commencement of four new Transport Operations (Marine Safety) Standards (2006)
- Introduction of compulsory life jacket wearing—legislation and education campaign (2006)

4.0 Fatal and serious marine incidents

This section examines the combination of marine incidents that resulted in fatalities and serious injuries (FSI incidents).

4.1 Reported fatal and serious injury incidents

In 2006, Maritime Safety Queensland received reports of 47 FSI incidents—seven less than in 2005. This FSI incident outcome is in line with the previous four-year average of 46.75 FSI incidents per year.

Studies of hospital admissions data suggest a higher level of serious injuries from ‘water transport’ accidents than indicated from Maritime Safety Queensland’s marine incident records. It is acknowledged that there is a level of under-reporting of non-fatal injury marine incidents. Maritime Safety Queensland is liaising with Queensland Health to access hospitalisation data to more accurately determine the extent and nature of serious injuries resulting from marine incidents.

There was a combined total of 53 fatalities and serious injuries recorded from the reported marine incidents in 2006—17 fatalities and 36 serious injuries. While the number of fatalities in 2006 is high the combined total is consistent with the previous four-year average of 53.5 fatal and serious injuries per annum.

4.2 FSI incidents by region

Figure 15 shows the number of FSI incidents reported in each region during 2006.

In 2006 four regions recorded fewer FSI incident numbers than in 2005. Brisbane region recorded a significant decrease in the number of recorded FSI incidents—with seven recorded FSI incidents in 2006, down from 14 in 2005 and well under-represented when compared with the region’s previous four-year regional average of 13.75 FSI incidents per annum.

The Cairns region, with 15 recorded FSI incidents, recorded the highest number of FSI incidents in 2006—up by eight on the region’s 2005 result and almost double the region’s previous four-year average of eight FSI incidents. While the Cairns region has approximately nine per cent of the state’s registered vessel fleet, the 15 FSI incidents reported for the Cairns region represent approximately 32 per cent of the total reported FSI incidents in 2006 (n=47). The 15 incidents resulted in seven fatalities and nine persons seriously injured. Of the region’s 15 FSI incidents, 10 involved commercial

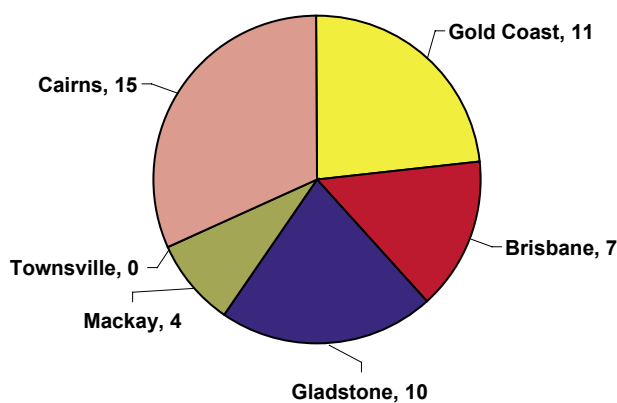


Figure 15: Fatal and serious injury incidents in 2006 - by region



vessels and five involved recreational vessels, including four recreational speedboat incidents.

Gold Coast region recorded the next highest number of reported FSI incidents in 2006 with 11 recorded FSI incidents. These 11 incidents resulted in one fatality and 12 persons seriously injured. While Gold Coast region has approximately 14 per cent of the state's registered vessel fleet, the 11 recorded FSI incidents represent approximately 26 per cent of the total FSI incidents in Queensland in 2006. The Gold Coast region's FSI incidents comprised six commercial vessel incidents and five recreational vessel incidents. Four of the five recreational vessels involved were recreational speedboats.

There were only four recorded FSI incidents in the Mackay region in 2006—down significantly on the nine reported FSI incidents in the region in 2005 and the region's previous four-year average of 6.25 FSI incidents. The four FSI incidents resulted in the loss of one life and the hospitalisation of four persons.

Gladstone region recorded ten FSI incidents in 2006, four more than reported in 2005. This was almost double the region's previous four-year average of 5.25 FSI incidents. The ten FSI incidents resulted in the loss of four lives and the hospitalisation of seven persons.

Townsville region did not record any FSI incidents in 2006.

Incident study 1

Shooting the breeze!

The vessel: 6.2m commercial water taxi

The incident

After spending a boozy Saturday at the pub, a man decided to head home using the local water taxi. Despite adequate onboard signage and verbal warnings from the master of the water taxi, the passenger, in his inebriated state, felt compelled to stand on his seat and feel the wind through his hair. The master repeatedly directed him to sit down. At the same time, other passengers attempted to restrain him. Finally, after much coercion, he got back into his seat.



The experienced master, noting the potential for injury to the passenger, immediately slowed the vessel. However, the inebriated passenger stood up once again and as the boat continued to decelerate, he fell forward over the bow.

The master immediately stopped the boat to minimise harm to the person overboard. But despite the master's best efforts, the vessel ran over the top of him. The passenger sustained major lacerations to his face, head and arms. The master immediately called ooo and the injured man was transferred to a waiting ambulance at a nearby marina. He required emergency surgery for his injuries and was hospitalised for a number of weeks.

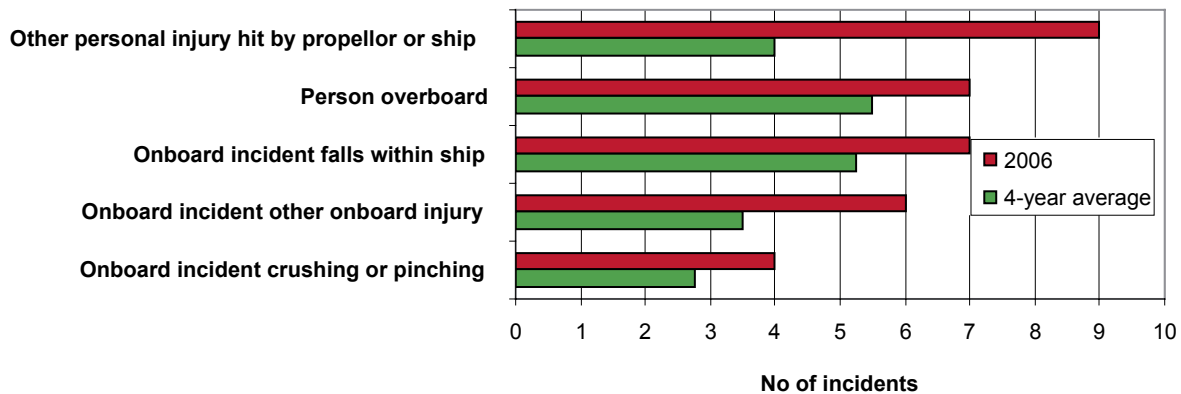
Safety insights

- Alcohol and boats do not mix, even as a passenger.
- A prudent master always assesses risks inside his boat as well as outside.
- Boats by their nature can move unexpectedly in any direction.
- Whenever moving about on a boat, ensure you have hold of a railing or other secure point.

4.3 FSI incidents by incident type

The five most frequently occurring types of fatal and serious injury incidents reported in 2006 accounted for 33 (70.2 per cent) of all reported incidents (n=47). Figure 16 shows the top five incidents types reported in 2006 compared with their previous four-year average involvement.

Figure 16: Fatal and serious marine incidents in 2006 by incident type (Top 5)



All of the top five incident types have shown increases in involvement in 2006. All five are significantly over-represented when compared with their previous four-year average involvement.

The most frequently-occurring FSI incident type in 2006 was 'other personal injury hit by propeller or ship' (9), up from seven in 2005 and well above the previous four-year average involvement of four.

The next most frequently-occurring FSI incident types in 2006 were 'person overboard' (7) and 'onboard incidents falls within ships' (7). These compare with previous four-year average involvements of 5.50 and 5.25 respectively.

'Person overboard' incidents accounted for 4.3 per cent (30) of all reported marine incidents in 2006 but made up almost 15 per cent (7) of the FSI incidents (n=47) and almost 43 per cent of the fatal incidents reported in 2006.

Onboard incidents as a group made up more than 36 percent (17) of all reported FSI incidents in 2006. This compares with 40.8 per cent of all FSI incidents in 2005. Comparatively, onboard incidents accounted for only 8.3 per cent of all reported marine incidents in 2006.

4.4 FSI incidents by vessel type and length

The 47 FSI incidents reported in 2006 involved 56 vessels. Figure 17 shows the five vessel types that figured most frequently in FSI incidents in Queensland in 2006 and their comparative involvement since 1999. The five most frequently occurring vessel types involved in FSI incidents in 2006 were:

- Recreational speedboats (16)
- Commercial fishing vessels (7)
- Commercial speedboats (7)
- Commercial-other (6)
- Commercial passenger vessels (5)

Three of the vessel types showed proportional increases in FSI incident involvement in 2006—recreational speedboats, commercial speedboats and commercial-other ships.



There were 16 recreational speedboats involved in FSI incidents in 2006, up from 13 in 2005 and in line with the previous four-year average involvement of 14.75. FSI incidents involving recreational speedboats resulted in the loss of eight lives and the hospitalisation of eight others.

There was a sizeable increase in the involvement of commercial speedboats in FSI incidents—from three in 2005 to seven in 2006, up significantly on their previous four-year average involvement of 4.25. These seven incidents resulted in the hospitalisation of eight seriously-injured persons. Commercial fishing ships continue to be heavily represented in FSI incidents. There were seven commercial fishing ships involved in FSI incidents in 2006. These incidents resulted in the loss of five lives and serious injuries to two of the fishing ships' crew.

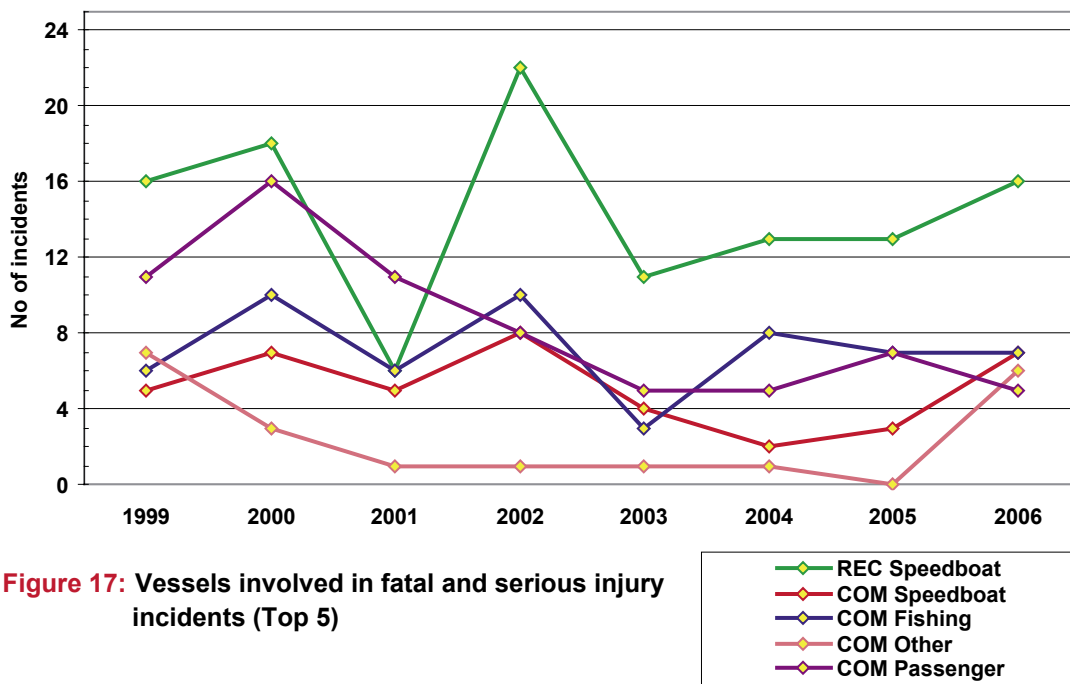


Figure 17: Vessels involved in fatal and serious injury incidents (Top 5)

Of the 56 vessels involved in the 47 FSI incidents in 2006, 24 (42.8 per cent) were under eight metres in length. This compares with 56 per cent of vessels under eight metres in 2005. 15 of these were recreational vessels and nine were commercially registered vessels. 15 (26.8 per cent) of the vessels involved in FSI incidents in 2006 were over 15 metres in length—compared with 20 per cent in 2005. All 15 vessels were commercially registered. Looking at the 14 incidents in 2006 that resulted in fatalities, there were 16 vessels involved. Four of these vessels were less than 8 metres in length, all recreationally registered. The remaining 12 vessels ranged in length from 8 to 53 metres—six commercial vessels and six recreational vessels.

4.5 FSI incidents by location

Twenty (42.6 per cent) of the reported FSI incidents in 2006 occurred in offshore waters, four more than in 2005. A further 17 (36.2 per cent) reported FSI incidents occurred in smooth waters. Only 6.4 per cent of FSI incidents in 2006 occurred in inland waters—down from 11.5 per cent in 2005.

There were eight fatalities and 13 serious injuries that resulted from the 20 offshore FSI incidents compared with five fatalities and 14 serious injuries from the 17 FSI incidents in smooth waters. Figure 18 shows the location of reported FSI incidents in 2006.

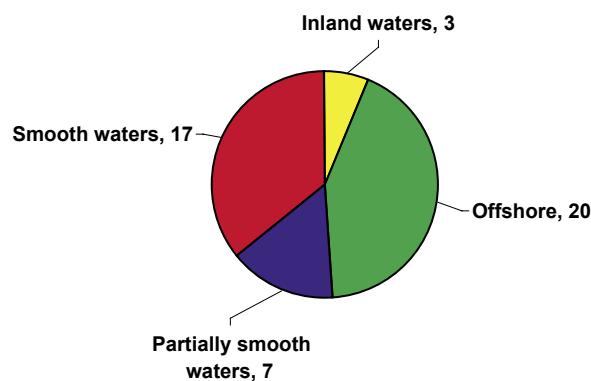


Figure 18: Fatal and serious injury incidents in 2006 - by location

4.6 FSI incidents—incident characteristics by extent of involvement

This section analyses FSI incidents in 2006 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 2006 compared with their average rate of involvement in FSI incidents in the previous four-year period.

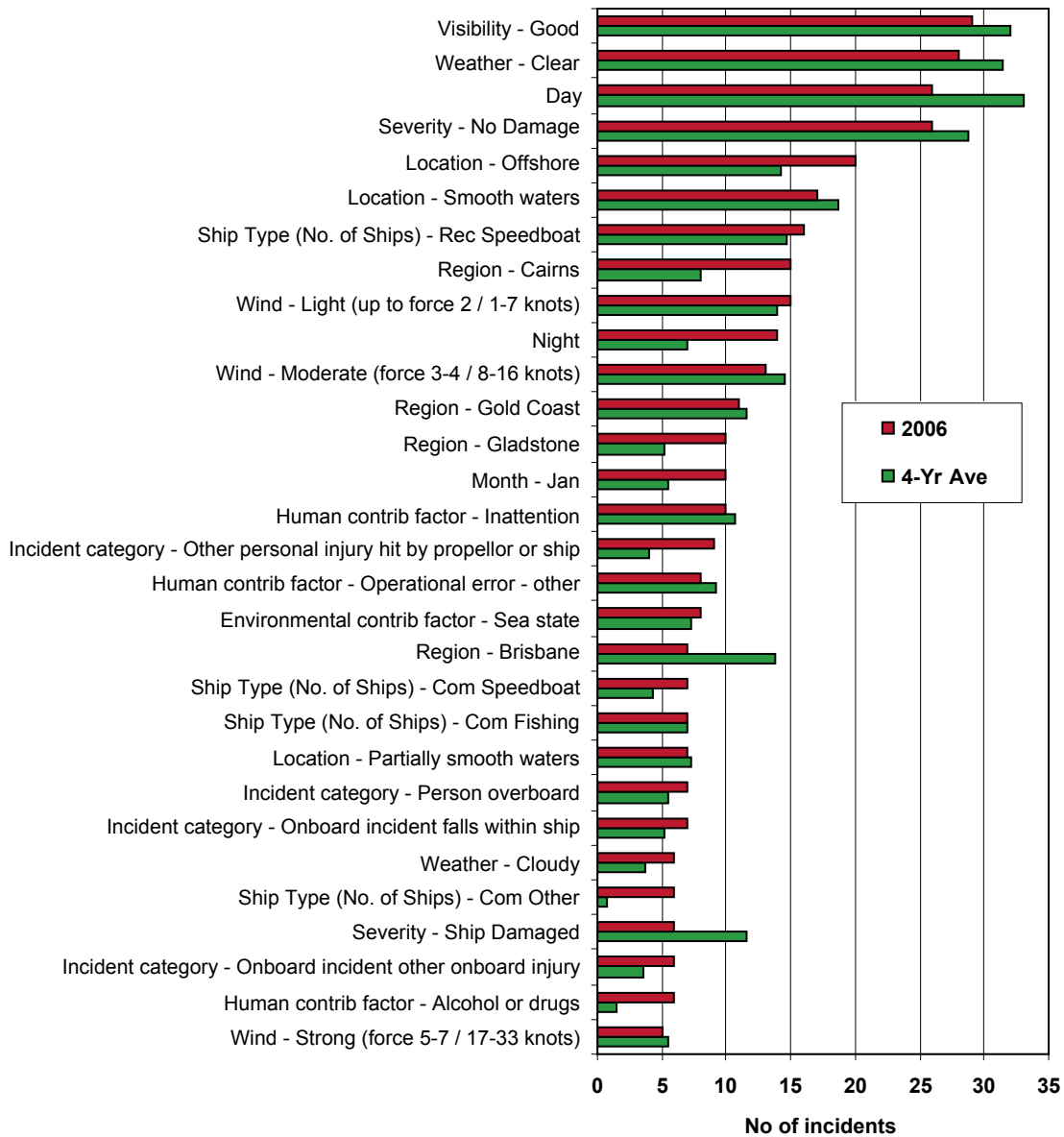
Figure 19 shows the extent of involvement in 2006 of the ‘top 30’ incident characteristics together with their average rate of involvement over the previous four-year period. Despite an 8.7 per cent increase in the number of reported incidents in 2006 the majority of the 30 most frequently occurring attributes are under-represented when compared with their previous four-year average involvement.

The most notably over-represented attributes in FSI incidents in 2006 were:

- Offshore incidents
- Cairns region incidents
- Night time incidents



Figure 19: Characteristics ranked by size of involvement in marine incidents resulting in fatalities and serious injuries - Queensland - 2006 (Top 30)




Twenty (42.6 per cent) of the 47 FSI incidents reported in 2006 occurred in offshore waters. This represents an increase of 25 per cent over the number of offshore FSI incidents in 2005 and a 40.35 per cent over-representation when compared with the previous four-year average for offshore FSI incidents. As mentioned earlier in the report offshore incidents resulted in eight fatalities and 13 people being hospitalised.

The most frequently occurring offshore FSI incidents in 2006 were onboard incidents (nine). A further four incidents involved a person overboard, resulting in four fatalities. All four of these fatal person overboard incidents involved commercial fishing vessels.

Four of the 20 offshore FSI incidents involved recreational speedboats. These four incidents resulted in two deaths and three persons seriously injured.

In 2006 the Cairns region recorded 15 FSI incidents, up from seven in 2005 and well over-represented when compared with the region's previous four-year average number of reported FSI incidents (eight).



The Cairns region accounted for almost 32 per cent of the State's FSI incidents in 2006 and 41.2 per cent of the 17 marine incident fatalities recorded in 2006.

Fourteen (29.8 per cent) of the 47 FSI incidents recorded in 2006 occurred in the night-time hours between 6pm and 6am. This represents an increase of more than 133 per cent over the six night-time FSI incidents recorded in 2005. The 14 night-time incidents resulted in eight fatalities and seven persons being seriously injured. Over the previous four years an average of seven FSI incidents occurred each year during the hours of darkness.

Recreational speedboats (13) were the most frequently represented vessels in FSI incidents in 2006, up by one on their involvement in FSI incidents in 2005, but marginally below their previous four-year average involvement in FSI incidents (13.75). The involvement of recreational vessels in marine incidents is examined in more detail later in this report.

Less than two per cent (12) of all incidents reported in 2006 involved a person being hit by a vessel or by a vessel's propeller. Despite this, the 'Other personal injury-hit by propeller or ship' incident type accounts for more than 19 per cent of reported FSI incidents and almost 17 per cent of all recorded fatalities and serious injuries in 2006. The nine recorded incidents represent a 125 per cent increase in 2006 over the previous four-year average FSI involvement for this incident type. One person died and eight were hospitalised as a result of these nine incidents. This illustrates the likely severe consequences from this type of incident.

As has been the case in recent years, ambient conditions including clear weather, good visibility and the daytime period were some of the most frequently occurring attributes of FSI incidents in 2006. These factors characterise more than 50 per cent of the 47 reported FSI incidents in 2006—down from 75 per cent level of involvement in FSI incidents experienced over the past five years.

Of the incidents involving fatality or serious injury in 2006, more than 55 per cent (26) did not result in any physical damage to either the vessels involved or to other property.

In 2006, the proportion of FSI incidents occurring in smooth waters decreased relative to the number of smooth water FSI incidents in 2005. There were 17 smooth water FSI incidents reported in 2006—36.2 per cent of all FSI incidents in the year. This compares with 23 (44.2 per cent) smooth water FSI incidents in 2005. The previous four-year average number of smooth water FSI incidents was 18.75. Despite this fall in the proportion of smooth water incidents involving a fatality and serious injury, five people died and a further 14 people were hospitalised from these incidents.

Recreational speedboats were the most frequently involved vessel type in all FSI incidents in 2006. There were 13 (27.6 per cent) involved in the 47 FSI incidents reported in 2006—in line with the 12 recreational speedboats involved in FSI incidents in 2005 and a previous four-year average FSI incident involvement in 13.75. The involvement of recreational vessels in marine incidents is examined in more detail later in this report.

There were also seven commercial fishing vessels involved in the 47 reported FSI incidents in 2006, the same number as in 2005 and in line with a previous four-year average FSI incident involvement of 7.25. These seven vessels were involved in seven separate FSI incidents resulting in five fatalities and two 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.



Incident study 2

Net gain or loss?

The vessel: 16.8m commercial fishing vessel

The incident

Around midnight, three men aboard a commercial prawn trawler had just winched the nets in for their first catch of the night. Not long after casting the nets for the second time the master encountered a problem with the trawl gear. It appeared that one of the nets or its trawl gear was snagged.

While the master was talking to the owner of the vessel by mobile phone seeking advice about whether to cut the trawl gear free, one of the deckhands noticed that water was beginning to wash over the back deck. The deckhand yelled to the master who immediately attempted to cut the trawl gear away with an angle grinder, but at the same time a swell broke over the side of the boat rolling it onto its side. The two crewmen were thrown into the water and initially swam clear of the vessel. Once it settled upside down they managed to scramble onto the upturned hull. The master was not sighted.

After some time the trawler's dinghy surfaced near the upturned hull and the two crewmen swam to it, righted it and were able to climb aboard and bail most of the water out. It was not long before another trawler in the area located the two men in the dinghy and was able to raise the alarm. They were shortly joined in their search for the master by a number of other trawlers but the master was not located. The upturned trawler eventually sank. The master's body was never found. The trawler's life jackets apparently were placed in a locker in the wheelhouse but were not able to be retrieved prior to the vessel capsizing.

Safety insight

- When operating in offshore waters, life rafts should be easily accessible and hydrostatically released in the event of capsize or sinking.
- Life jackets are not boating accessories.
- The wearing of a suitable life jacket and personal EPIRB is strongly recommended in dangerous industries such as offshore commercial fishing.
- Commercial fishers should always have contingency plans in the event their nets get snagged. Saving the crew first and the vessel second is always more important than saving trawl gear or nets.



5.0 Regional marine incident summaries

5.1 Gold Coast region

The Gold Coast region comprises the local authorities of the Gold Coast, Logan, Beaudesert and Boonah. From a waterways perspective, the region oversees 189 kilometres of mainland coastline, 266 kilometres of island coastline and 210 kilometres of rivers and creeks. The region's waterways include the Southport Broadwater reaching from Jumpinpin bar to the multitude of residential canals within the Gold Coast, the Gold Coast Seaway, the tidal limits of the Logan, Pimpama, Coomera and Nerang Rivers, along with Tallebudgera and Currumbin Creeks, the Hinze Dam, and Lakes Moogerah and Maroon.

During holiday periods Gold Coast waterways become congested by a diverse range of recreational watercraft. With rapidly expanding boat building facilities at the Coomera Marine Precinct, Hope Island and Southport trending towards the construction and maintenance of larger vessels, the dynamics of on-water boating traffic are changing, particularly in terms of integration of larger, more powerful vessels with the traditional but ever expanding small recreational speedboat type fleet that frequent the shallow waters of the region. Commercial fishing charter, ferry and other commercial vessel operations also continue to expand to satisfy tourist demand.

While spatially a very small region, the Gold Coast region is home to more than 30,000 registered vessels, 97 per cent of which are recreational. The region also boasts significant interstate and international visiting vessel numbers all year round.

In 2006 the region experienced growth in registered vessel numbers of approximately four per cent, marginally below the state-wide growth rate of 4.44 per cent.

Looking at marine incidents, there were 89 marine incidents reported in 2006, three less than in 2005 but up by 8.6 per cent on the average number of reported marine incidents over the previous four-year period.

With the diversity and volume of vessel traffic in the Gold Coast region it is not surprising that collision incidents made up 40.5 per cent of all the reported incidents in the region in 2006. Collisions with other vessels accounted for 30.3 per cent of the region's reported incidents.

Incident study 3

Never to be forgotten Christmas party!

The vessel: 10m recreational speedboat

The incident

While enjoying an evening Christmas party cruise on a Gold Coast waterway one of the guests climbed onto the rear swim platform and accidentally fell into the water and was struck by the vessel's propeller. Another guest dived into the water to assist the woman and raised the person overboard alarm. The master immediately stopped the vessel and the injured woman was assisted back onto the swim platform of the vessel.

The police were notified of the accident by mobile phone as the master proceeded to beach the vessel nearby. The woman sustained fatal injuries to her head and died at the scene. It is not clear what caused the woman to fall into the water but both the guests and the master of the vessel had been drinking.

Safety insights

- The master of a boat has a general obligation to ensure the safety of all on board.
- Alcohol & boating do not mix.
- Masters should always expect the unexpected when boating.





As expected more than 46 per cent of the region's reported incidents occurred within the extensive smooth water limits of the region. A further 22.5 per cent of incidents occurred in inland (non-tidal) waters. The region recorded the same number of incidents in offshore waters in 2006 as in 2005 (19).

The Gold Coast region's climate is ideal for year round boating activity. More than 80 per cent of the region's reported incidents in 2006 (n=89) occurred in daylight hours, clear weather, light to moderate winds and good visibility. This suggests there are other factors contributing to these incidents occurring.

There were 120 vessels involved in the 89 reported Gold Coast region incidents in 2006. Recreational speedboats (24) were the most involved vessel in reported incidents. Recreational motorboats, commercial passenger vessels and commercial speedboats each recorded 14 vessels involved in marine incidents in 2006. There were also 13 recreational jet skis involved in reported marine incidents in the Gold Coast region in 2006. This figure is likely to understate the true involvement of recreational jet skis in marine incidents.

Turning to those incidents that resulted in fatalities or serious injuries, there were 11 such incidents reported as occurring in the Gold Coast in 2006, compared with 14 in 2005. These 11 incidents resulted in one death and 12 persons being hospitalised with serious injuries. The fatality resulted from an incident where a female passenger fell overboard from a recreational speedboat and was accidentally hit by the vessel's propeller.

Seven (63.65 per cent) of the Gold Coast's reported FSI incidents occurred in offshore waters. Five of these were incidents involving injuries to the crew of surf life saving inflatable rescue boats (IRBs).

All of the 12 reported serious injuries resulted directly from falls within the vessel or as a result of the operation of the vessel.

5.2 Brisbane region

The Brisbane region boundary encompasses 37 local authorities. The region extends west to Bulloo Shire on the South Australian border to the northern boundary of the Booringa Shire of which the township of Mitchell is its headquarters. The waterways contained within the region include north of Logan River through Moreton Bay extending to Noosa River in the north. The western waters consist of Wivenhoe, Somerset, Beardmore dams and inland rivers including the Condamine and Balonne Rivers which flow directly into the Murray Darling River system.

One of the factors contributing to an increase in boating activity within the coastal region has been the continuing decrease in water levels of inland waterways. Boat owners are particularly being attracted to the Sunshine Coast waterways where recreational and commercial boating activities are experiencing rapid expansion.

From a shipping perspective, the region revolves around the Port of Brisbane which processes an estimated 5,000 trade ship movements in and out of the port each year. Over the past five years the port has experienced annual growth in ship movements of around 10 per cent.

In addition to trade and associated ship movements, other commercial operators access Moreton Bay shipping channels and fairways. These include dredging boats, ferries, barges, survey ships, commercial tourist and passenger vessels and commercial fishing vessels. Commercial fishers tend to use the channels and fairways more at night and this increases marine safety risks.

Although the majority of smaller recreational vessels don't generally venture offshore past the port of Brisbane entrance beacons, there is still considerable recreational vessel movement in and out of the shipping channels and fairways on route to many of the islands and local fishing grounds around Moreton Bay. There is also an active recreational yachting fraternity in the Brisbane region with frequent organised events in and around the main shipping channels of Moreton Bay.

While the Brisbane region boasts almost 43 per cent of the state's registered recreational vessel fleet, the growth in registered recreational vessel numbers slowed in 2006 to 3.63 per cent compared with

a state average growth of 4.6 per cent. Similarly, the number of registered commercial vessels in the region actually fell by 4.45 per cent in 2006.

Against this backdrop the region recorded 204 marine incidents in 2006, one more than in 2005 and in line with the four-year average number of reported marine incidents. These incidents represent 29.1 per cent of all reported incidents in Queensland in 2006.

As with the Gold Coast region, collision incidents were the single greatest type of incident reported in 2006. Overall, 70 collision incidents (34.3 per cent) were reported including 42 incidents involving collisions with other vessels. Capsize incidents were also over-represented in 2006 with 51 (25 per cent) such incidents reported.

As would be expected, the majority (65.2 per cent) of incidents occurred within the smooth and partially smooth water limits of the region. A further 23.5 per cent of incidents occurred in offshore waters with the remaining 22 incidents occurring in non-tidal inland waters of the region.

Human factors were identified as contributing to more than 64 per cent of the reported incidents in 2006, with inattention and operational error representing more than 45 per cent of all the identified human factors contributing to these incidents.

The majority of reported incidents (more than 60 per cent) occurred in daylight hours, clear weather and good visibility.

There were 276 vessels involved in the 204 reported Brisbane region incidents in 2006—a ship to incident ratio of 1.35:1. Recreational vessels (141) made up a little over 51 per cent of the vessels involved. Among these, recreational motorboats (44), recreational speedboats (42) and recreational sailboats (35) were the most heavily involved recreational vessels. There were only eight recreational jet skis reported as involved in marine incidents in the Brisbane region in 2006.

Incident study 4

Weir did that come from?

The vessel: 4.2m outboard-powered recreational speedboat

The incident

Three men were boating late at night on an inland river. While travelling at speed the master realised too late that he was too close to a weir across the river. Despite his best efforts to steer clear, the runabout struck the rubber wall extension bladder of the weir. One of the passengers was instantly thrown from the boat over the weir wall, landing in the overflow pond 11 metres below the weir. With the force of the impact, the runabout catapulted sideways then backwards over the weir wall, ejecting the other two men in the process. The vessel came to rest upside down hanging from a water break bollard at the top of the weir.

The two men made heavy contact with the concrete weir wall before tumbling down the wall into the overflow pond. The first man ejected, still conscious after his fall, was able to raise the alarm and emergency services were activated. A search ensued and one of the remaining two men was quickly found, unfortunately dead. A search continued for another 48 hours before the remaining man's body was also found in the overflow pond.

Safety insights

- Maintaining a proper lookout and safe and manageable speed are critical, particularly in restricted visibility, darkness and restricted areas.
- Masters must ensure they have knowledge of local conditions and hazards.





Looking at commercial vessel involvement, there were 145 commercial vessels reported as involved in the marine incidents in the Brisbane region in 2006. Among these, commercial passenger carrying vessels were the most involved type of commercial vessel with 39 vessels involved—marginally over-represented compared with their previous four-year average involvement (34.5). The next most involved commercial vessels were commercial fishing vessels (28) and the ‘commercial-other’ vessel category (25). The ‘commercial-other’ category includes vessels such as trading vessels under pilotage, barges and the like.

From the perspective of marine incident fatalities and serious injuries the Brisbane region saw significant improvement in 2006. There were seven incidents reported in 2006 that resulted in fatalities or serious injuries, significantly fewer than the 14 such incidents reported in 2005 and a previous four-year average of 13.75 FSI incidents. These seven incidents nonetheless did result in four deaths and a further four persons being hospitalised with serious injuries. The number of persons seriously injured represents a significantly improved outcome when compared with the previous four-year average number of persons seriously injured (12.25).

Two of the deaths occurred in one incident in which a high-speed inflatable recreational craft collided with a moored recreational sailing boat in the Brisbane River. The incident occurred just after midnight. The four serious injury incidents all involved injuries resulting from onboard incidents or from the manner of operation of the vessel.

5.3 Gladstone region

The Gladstone region covers the area from St Lawrence in the north, south to Double Island Point and west to the Northern Territory border. This includes the tourist areas of Hervey Bay, Tin Can Bay and Yeppoon, the commercial fishing centres of Tin Can Bay, Urangan, Bundaberg, Gladstone and Yeppoon, the ports of Bundaberg, Rockhampton (Port Alma) and Queensland’s largest multi user port, Gladstone. Commercial boating activity also takes place on the inland waterways such as the Thompson River. The region also encompasses the southern portion of the Great Barrier Reef including Heron, Lady Elliot and Lady Musgrave Islands. Larger commercial cruise vessels also occasionally call at the Port of Maryborough.

The region includes 1868 kilometres of mainland coastline, 1342 kilometres of island coastline, a further 1737 kilometres of rivers and creeks and a number of significant freshwater impoundments which allow boating and fishing activity.

With such diverse maritime interests within the region, there inevitably are conflicting demands between the commercial, fishing and recreational sectors of the industry. The recreational sector includes a vibrant houseboat and yacht rental industry operating mainly in the Great Sandy Strait. Recreational boating activity in this region continues to increase at a rate beyond the state average. The lack of a significant on-water compliance presence on inland waterways has recently been highlighted with an emerging issue of non-compliance by boaties with safety equipment requirements.

At 31 December 2006 there were 38,051 registered vessels within the Gladstone region including 37,148 registered recreational vessels and 903 registered commercial vessels. This represents growth in registered vessel numbers in 2006 of 6.77 per cent—well above the state average growth rate of 4.44 per cent for 2006. Commercial vessel numbers showed a 4.15 per cent increase in 2006 compared with a fall of 1.31 per cent in commercial vessel numbers statewide.

The Gladstone region received 139 reports of marine incidents in 2006, 35 more than in 2005 and up by 48 per cent on the previous four-year average of 93.75 reported incidents per year.

Collisions (42) were the most prevalent type of incident reported in 2006, including 24 incidents involving collisions between vessels. There was also an increased number of unintentional grounding incidents (33)—up from 29 in 2005 and well above the previous four-year average of 17.25 unintentional grounding incidents.

Sixty-nine per cent of the reported incidents occurred within the smooth and partially smooth water limits of the region. However the number of offshore incidents (38) also increased in 2006 from 28 in 2005 and a previous four-year average of 24.25. More than 75 per cent of the reported incidents occurred in clear weather and good visibility.

Human factors were identified as contributing to 64 per cent of the reported incidents in 2006, with inattention (21) and navigational errors (29) the most frequently identified human contributing factors.

There were 171 vessels involved in the 139 reported incidents in 2006—90 commercial vessels and 81 recreational vessels. The most involved vessels in incidents in 2006 included commercial fishing vessels (31), recreational motorboats (36), recreational sailboats (25) and commercial passenger vessels (20). Commercial fishing vessels were significantly over-represented when compared with their involvement in 2005 (21) and their previous four-year average involvement (20.5).

It is noteworthy that 13 vessels were lost as a result of marine incidents in 2006—well above the previous four-year average of 7.5 vessels lost per year. Ten of the 13 vessels were lost in offshore waters.

Incident study 5

Life jackets are not life savers unless worn!

The vessel: 9m timber recreational motorboat

The incident

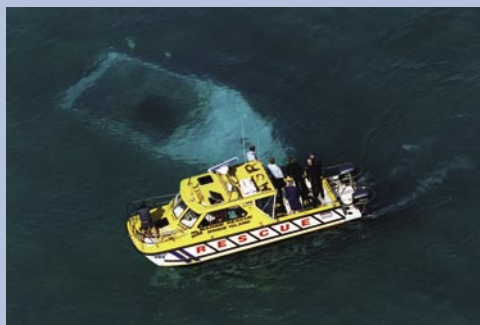
On a fine Friday evening, the owner of a 30 foot timber cabin cruiser decided to go fishing for the weekend. He set out with his trusty dog, and a friend on board as deckhand. During the night, the vessel's engine stopped and the owner dropped anchor to assess the problem. When he went to investigate, he discovered the rear deck was awash and that the vessel was sinking quickly. The vessel sank shortly thereafter.

So sudden was the vessel's demise that neither man was able to fit a life jacket before abandoning the vessel. In the darkness they hung onto whatever floating debris they could find. Eventually the two men were separated by tidal currents. The deckhand subsequently managed to locate a life jacket floating in the current and was able to fit it to himself in the water. After several hours, he drifted onto the shore of a nearby island, but it was not until the following morning that he could raise the alarm and get assistance. The owner and master of the vessel was located some time later washed ashore on the same island. He had drowned.

It was subsequently established that the vessel's lifejackets were stowed under the bunks rather than in an easily accessible location in the wheelhouse.

Safety insights

- A personal flotation device is a mariner's best friend.
- Personal flotation devices should be easily accessible to all persons on board the vessel at all times.
- If time permits, do not abandon ship without first fitting a personal flotation device.
- At any time that there is doubt as to the watertight integrity of the vessel, personal flotation devices should be fitted.





The region's record in terms of marine incident fatalities and serious injuries deteriorated in 2006. During the year there were ten reported incidents that resulted in four deaths and seven serious injuries. The four fatalities represent an over-representation of 100 per cent when compared with the region's previous four-year average fatality rate. All four fatalities involved recreational vessels and three occurred in inland waters, including a double fatality which resulted from the collision of a recreational speedboat with the wall of a dam.

Five of the seven serious injury incidents involved commercially operated vessels. The two remaining serious injury incidents involved recreational speedboats.

5.4 Mackay region

The Mackay region extends from Georges Point and Gloucester Island at the northern end of the Whitsunday Islands to Long Island Sound and St Lawrence in the south. While the bulk of the region's marine activity is located in the northern area at Mackay, the Whitsunday Islands and Airlie Beach, the region is also responsible for marine and boating safety in a band of mainland Queensland stretching west to the Northern Territory border.

The region encompasses two major shipping ports at Mackay and Hay Point and monitors the movement of ships both within the ports and the inner shipping route of the Great Barrier Reef.

Marinas currently exist in Mackay, Abel Point (Cannonvale), Hamilton Island, Laguna Quays and Hayman Island and two more marinas are planned for the Whitsunday region to cater for the increasing boating activity. Construction of the Port of Airlie project has commenced and the new Shute Harbour Marina is in the development application stages. A major upgrade is also planned to increase the size of Hayman Island Marina.

While the number of commercial vessels in the region is static, vessels are improving in quality as the industry becomes more sophisticated and safety-conscious. The region boasts an active industry-based Marine Safety Culture Project in the Whitsunday area.

There is a much faster growth in the recreational sector as the size and speed of recreational vessels increases with the boom in the local markets and the mining industry. It is apparent that increasing recreational boating activity is placing a strain on the current recreational facilities as well as having implications for safe vessel movement management, as recreational boaties interact with extensive commercial marine activities.

The region overlooks 800 kilometres of mainland coastline, 1,341 kilometres of island coastline, 317 kilometres of navigable rivers and creeks and a number of freshwater impoundments. The Pioneer River in Mackay with its weir type impoundments supports recreational activities such as fishing, skiing, canoeing and rowing. The Kinchant, Teemburra and Peter Faust Dams are the main fresh water impoundments in the region and provide a facility for fishing, PWC users, skiers and recreational hobby craft users.

At 31 December 2006 there were 16,773 vessels registered within the Mackay region of which more than 95 per cent are recreational vessels. While the region's registered vessel fleet represents only 7.84 per cent of the total Queensland registered vessel fleet, growth in registered vessel numbers in 2006 was 6.75 per cent compared with a state average growth of 4.44 per cent.

Despite significant growth in vessel numbers and the associated increased on-water activity, the region's reported marine incidents for 2006 (105) were down by eight per cent on the 114 incidents reported in 2005 and the region's previous four-year average number of reported marine incidents (126.5).

With increasing congestion and vessel traffic it is not surprising that the most prevalent types of reported marine incidents were collisions. Of the 31 reported collision incidents, 20 involved collisions with other vessels. Equally as significant were the 29 unintentional grounding incidents reported in 2006—significant because of the 31 per cent reduction in this type of incident when compared with the 42 reported incidents in 2005.

Incident study 6

Paddling for one's life!

The vessels: 10.5m recreational speedboat and a competition class outrigger canoe

The incident

A group of employees from one of the Whitsunday's most popular island resorts had set off in one of the resort's outrigger canoes for a late afternoon training session. In ideal conditions the young men had only been paddling for a short time when they noticed a power boat nearby towing a wake board and tube. When the wake board rider fell off, the power boat started to turn at speed to return and pick up the rider.



It seems that the master of the power boat, focusing on picking up his skier, didn't notice the outrigger in front of him, even though the men aboard the canoe did their best to attract his attention. Fearing the worst, the paddlers scrambled and jumped for their lives, just as the power boat slammed directly into the side of the outrigger. One unlucky paddler took the full force of the power boat's impact, throwing him into the water and causing major injuries to his back, pelvis, leg & foot.

The injured man was transferred by Medivac helicopter to Mackay Base Hospital where he has subsequently undergone more than eight operations. He was later transferred to Royal Brisbane Hospital for further surgery.

Safety insights

- Masters need to maintain a proper lookout by sight and hearing to adequately assess the risk of a collision, particularly when involved in waterskiing type activities.
- When waterskiing, it is the spotter's job to watch out for the skiers – the master's job is to operate the boat safely.
- Excessive speed can be dangerous. Going slower allows more time to react to unexpected circumstances.
- A safe speed is one that takes account of all prevailing conditions including complementary boating activity.

Eighty per cent of the region's reported incidents in 2006 occurred in the region's extensive smooth and partially smooth water limits.

The Mackay region boasts a significant "bare boat" hire and drive sector. It is therefore not surprising that 24 of the 128 vessels involved in incidents in 2006 were commercial hire and drive vessels. The other vessel types significantly represented in reported marine incidents in 2006 were commercial passenger vessels (31) and recreational sailboats (22).

Looking at the 31 incidents involving commercial passenger carrying vessels, it is noteworthy that there were no fatalities or serious injuries resulting from these incidents. That said, it is somewhat concerning that 11 commercial passenger vessels ran aground and a further seven vessels were involved in collision incidents—three with other vessels.



5.5 Townsville region

The Townsville region extends from Gloucester Passage south of Bowen to waters up to Meunga Creek situated just north of Cardwell. The geographical boundary of the region also encompasses inland freshwater rivers, creeks and impoundments, such as Lake Dalrymple (Burdekin Falls Dam), extending west to the Northern Territory border. Included in the region are the Port of Townsville and the Port of Lucinda, Abbott Point and Bowen Harbour.

With easy access to the Whitsunday Island Group, the Bowen Harbour is home to a large recreational vessel fleet as well as a significant commercial fishing fleet which is primarily engaged in live trout fishing in the reef areas offshore from Bowen. There is only a remnant east coast trawl fleet still operating in the Townsville region.

From a shipping perspective, a major industrial bulk coal loading facility is located at Abbott Point. The Port of Townsville also receives considerable shipping movements throughout the year. The commercial marine sector is also vibrant in and around Townsville with the commercial dive boat industry and smaller commercial craft and high speed catamarans servicing tourism and community demands. Destinations include Magnetic Island and Palm Island.

Further north, hire and drive houseboats, guided commercial fishing charters and a significant number of recreational vessels operate in and around the Cardwell/Hinchinbrook Channel area.

The Townsville region oversights 827 kilometres of mainland coastline, 651 kilometres of island coastline and 769 kilometres of rivers and creeks.

Incident study 7

Fiery fishing trip

The vessel: 12m commercial passenger charter vessel

The incident

A commercial passenger charter vessel set out for a one day fishing charter offshore from Townsville with eight passengers onboard. While underway, smoke was noticed coming from the starboard engine compartment. The fire began to spread rapidly.


The master immediately radioed Coastguard of the fire onboard and soon after had no alternative but to order all passengers and crew to abandon ship. All were recovered by rescue vessels and returned to Townsville. The charter vessel proceeded to burn to the waterline.

Miraculously, only one person was injured—suffering mild smoke inhalation. The vessel was a total write-off.

Safety insights

- Fire onboard commercial passenger carrying vessels has been assessed as one of the top 10 marine safety risks in Queensland.
- There is no room for heroics during an incident involving fire onboard—it is often prudent to abandon the vessel (as proved to be the case in this incident).
- Quick thinking and response is critical when there is a fire onboard.
- Onboard fire incidents underline the importance of having emergency procedures, emergency drills and passenger briefings.





At 31 December 2006 there were 19,752 registered vessels within the Townsville region, including 19,234 registered recreational vessels. Registered vessel numbers in the region continue to grow marginally above the overall rate of growth in Queensland as a whole—4.6 per cent growth in 2006 compared with 4.44 per cent for Queensland as a whole. The number of commercially registered vessels within the Townsville region, while relatively small, increased by 6.8 per cent in 2006 compared with a 1.31 per cent fall in the number of commercially registered vessels statewide. This increase reversed three years of falls in the number of commercially registered vessels in the Townsville region.

Townsville region historically has had low numbers of reported marine incidents. In 2006 there were 42 marine incidents reported within the Townsville region, three more than in 2005, but under-represented when compared with the region's previous four-year average of 47.5 reported incidents.

The most prevalent types of incidents reported in 2006 were capsize incidents (11), collision incidents (7) and unintentional grounding incidents (9). The majority of the reported incidents (52.4 per cent) occurred within the region's smooth and partially smooth water limits. 35.7 per cent of incidents (15) occurred in offshore waters.

53.2 per cent of the vessels involved were commercially registered vessels, with commercial fishing vessels (6) and commercial passenger vessels (6) the most involved types of commercial vessels. While fewer recreational vessels were involved, there were 11 recreational motorboats involved and a further seven recreational sailboats. There was only one incident involving a jet ski (recreational) reported within the Townsville region in 2006.

The Townsville region's marine safety outcome when measured in terms of fatalities and serious injuries was exemplary in 2006, with no fatalities or serious injuries reported from marine incidents. This comes on the back of three recorded marine incident fatalities in 2005. It is acknowledged that the incident numbers in the Townsville region are historically small and even small random variations can make an otherwise good year look ordinary.

5.6 Cairns region

The Cairns region stretches from Mission Beach, south of Cairns up the east coast of Cape York including the islands of the Torres Strait then around the Gulf of Carpentaria to the Northern Territory border. The region's extensive mainland coastline coverage includes ports at Mission Beach/Clump Point (Tourism), Mourilyan (Molasses wharf), Innisfail (Fishing), Cairns (Sugar, tourism, fishing, coastal trade), Port Douglas (Tourism and some fishing), Cooktown (Tourism and fishing), Cape Flattery (Silica export), Thursday Island and Horn Island (Torres Strait & Cape York hub), Weipa (Bauxite export, some tourism/fishing) and Karumba (Zinc export, fishing and some tourism).

Inland, the region also is responsible for boating safety on Lake Tinaroo on the Barron River and Koombooloomba Dam on the Tully River.

In terms of commercial shipping operations, the active industry sectors include fishing (prawn trawling, tuna, fin fish, crayfish, beche-de-mer (sea cucumbers)), tourism (reef/dive/snorkel and fishing charter, visiting cruise ships and super yachts), export (sugar, bauxite, zinc, silica sand), general cargo (supply to Torres Strait and other remote communities) and merchant shipping transiting the Great Barrier Reef Inner Route.

The major issues in terms of marine safety confronting the region at present include the physical size of the region, accessibility to remote parts of the region, implementing the Torres Strait Marine Safety Strategy, maintaining a good marine safety record in the face of larger and faster tourist passenger carrying vessels, and continuing to improve the safety standards and practices of the large commercial fishing fleet.

Geographically, the Cairns region has nearly 3,000 kilometres of mainland coastline, 2,267 kilometres of island coastline and a further 6,434 kilometres of rivers and creeks.



Incident study 8

Watch out for water skiers!

The vessels: Two recreational speedboats (skiboats)

The incident

On a clear day at a popular skiing spot on an inland lake a high powered skiboat was attempting to pull a skier out of the water when it struck an inflatable ski biscuit behind another skiboat. There were two children on the inflatable tow at the time and one of them, a 13 year old boy, was struck by the bow of the skiboat. The boy suffered serious head injuries requiring admission to hospital.



Safety insights

- Maintaining a proper lookout and a safe and manageable speed are critical when undertaking water ski activities, particularly given the close proximity to other vessels and skiers and the frequently chopped and lumpy surface conditions.
- The role of the spotter/lookout when water skiing is to keep an eye out for the person being towed. The skiboat master must keep a proper lookout in relation to the safe operation of the vessel and its interaction with other vessels and water users.
- Inattention, even for a second, can result in unexpected and often catastrophic events.

There were 19,245 vessels registered in the Cairns region as at 31 December 2006 representing an increase of 3.04 per cent during the calendar year. All of the increase was in the region's recreationally registered vessel fleet, which makes up 94 per cent of the total registered vessel numbers. The region's commercially registered vessel numbers fell by nearly four per cent in 2006. It is not clear why commercially registered vessel numbers are falling, but it could be the result of increasing economic pressure on operational viability, particularly in the commercial fishing sector and as a product of larger commercial passenger vessels replacing multiple smaller vessels.

In 2006 there were 122 marine incidents reported in the Cairns region, up by 31 per cent on the number of incidents reported in 2005 and significantly over-represented when compared with the previous four-year average of 96.75 reported incidents.

The most frequently reported type of incident was collisions (32) of which 16 involved collisions with other vessels. There were also 22 unintentional grounding incidents and 21 capsize incidents reported. A further eight incidents involved a person overboard. 65 per cent of the incidents identified human factors as contributing to the incident. Inattention accounted for 30 per cent of the identified human contributing factors.

While the majority of the incidents (61.5 per cent) were reported as having occurred in smooth and partially smooth water limits, 41 (33.6 per cent) of the incidents were reported as having taken place in offshore waters.

There were 156 vessels involved in the 122 reported incidents. 71 per cent of these vessels were commercially operated vessels, including 39 commercial passenger carrying vessels, 28 commercial fishing vessels and 24 commercial non-passenger vessels. Of the 45 recreational vessels involved, there were 16 recreational speedboats, 16 recreational sailboats and 10 recreational motorboats. More than 71 per cent of the incidents occurred during daylight or twilight hours.

The loss of ships has been a feature of the Cairns region's marine incidents over the past five years, particularly commercial fishing vessels. That trend continued in 2006 with nine per cent of reported incidents resulting in the loss of 11 vessels. This compared with 6.4 per cent of incidents involving the loss of a vessel for the remainder of Queensland.



The Cairns region's fatal and serious injury incidents were up significantly in 2006, with 15 reported FSI incidents compared with seven in 2005 and a previous four-year average of eight reported FSI incidents. These 15 FSI incidents resulted in seven fatalities and a further nine people hospitalised with serious injuries.

Human factors were identified as contributing to more than 73 per cent of the reported FSI incidents. In three incidents alcohol and drugs were identified as contributing factors, while in four of the incidents inattention was identified as the major human contributing factor. Environmental and material contributing factors were each only identified as contributing to 13.3 per cent of the reported FSI incidents.

The most frequently occurring FSI incident type was person overboard with four such incidents reported. These four incidents resulted in a total of four fatalities. A further six of the FSI incidents involved death or serious injury as a result of an onboard incident.

Notably, seven (46.7 per cent) of the reported FSI incidents occurred in offshore waters, six of these resulting in fatalities. All of the region's seven fatalities occurred in offshore waters.

There were 20 vessels reportedly involved in the region's 15 FSI incidents. Commercial non-passenger vessels (5), commercial fishing vessels (4) and recreational speedboats (5) were the most involved vessels in FSI incidents.

6.0 Selected marine incident profiles

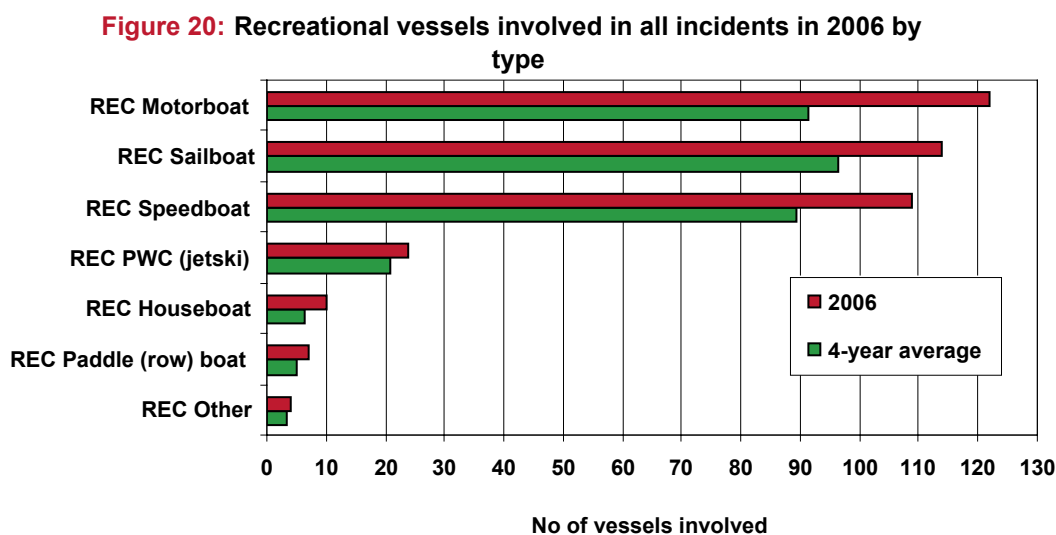


6.1 Incidents involving recreational vessels

To provide a context for considering the involvement of recreational vessels in marine incidents, there were 208,301 recreational vessels registered in Queensland as at 31 December 2006—an increase of 9,163 (4.6 per cent) in the year, down marginally in percentage terms on the comparative increase in 2005 of 4.9 per cent and down markedly on the previous four-year average annual increase of 5.27 per cent. Recreational vessels represent 97.4 per cent of Queensland's total registered vessel fleet.

Recreational speedboats, that is, boats capable of planing, make up 84.7 per cent of all registered recreational vessels. It is also noted that while recreational personal water craft (jet skis) represent only 4.62 per cent of all registered recreational vessels, their numbers grew in 2006 by a little over 8 per cent compared with an overall increase in registered recreational vessel numbers of 4.6 per cent. Recreational motorboats make up approximately 12.03 per cent of all registered recreational vessels in Queensland. Recreational sailing vessels make up approximately 3.23 per cent of all registered recreational vessels in Queensland.

In 2006, recreational vessels were involved in 335 (47.8 per cent) of reported marine incidents in Queensland—up by 28 per cent on their four-year average involvement in 261.25 incidents. Figure 20 shows the relative involvement of the different types of recreational vessels in marine incidents together with their previous four-year average involvement in marine incidents.



All recreational vessel types were over-represented in marine incidents in 2006 when compared with their average involvement over the previous four-year period. Recreational motorboats were significantly over-represented in 2006 with 122 vessels involved in incidents. This compares with a previous four-year average involvement of 91.25 recreational motorboats in reported incidents.

Likewise, recreational speedboats (109) were significantly over-represented in incidents in 2006 in both relative and absolute terms. In 2005 there were 87 recreational speedboats involved in reported marine incidents. Over the four years 2002 to 2005 an average of 89.5 recreational speedboats were involved in incidents each year.

In terms of vessel length, 38.5 per cent of the recreational vessels involved were greater than eight metres in length. This constitutes a significant over-representation when only 5.4 per cent of the registered recreational vessel fleet in Queensland is over eight metres in length. The majority of recreational vessels over eight metres in length involved in marine incidents were recreational sailing vessels and recreational motorboats.

More than 60 per cent of the incidents involving recreational vessels occurred in the daytime, in clear weather and good visibility. 50.7 per cent of the incidents resulted in the vessels being damaged.

Approximately 44 per cent of the incidents occurred in smooth waters, 11 per cent in inland waters and the remaining incidents in partially smooth and offshore waters. A little over 51 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 56 plus per cent share of the state's registered recreational vessel fleet and the concentration of recreational boating activity in the South-east of the state.

The number of recreational vessels lost in marine incidents rose from 16 in 2005 to 31 in 2006—a rise of 94 per cent. Figure 21 shows the involvement of three recreational vessel types in the 'ship lost' incident outcomes for the period 1997 to 2006. Of the 48 vessels lost in all reported marine incidents in 2006, 29 (60.4 per cent) were recreational vessels—16 recreational motorboats, 11 recreational speedboats and two recreational sailing vessels. The number of recreational vessels lost is well above the previous four-year average of 21.5 recreational vessels lost.

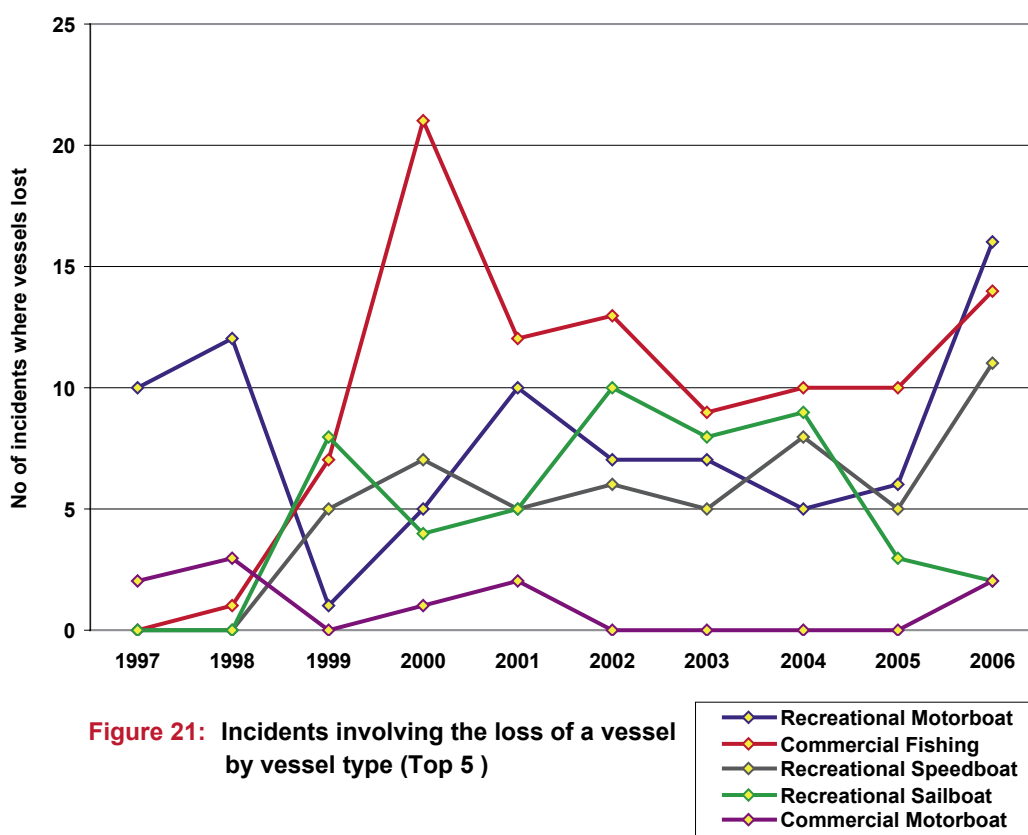


Figure 21: Incidents involving the loss of a vessel by vessel type (Top 5)

Recreational vessels were involved in 20 FSI incidents in 2006—42.5 per cent of all the reported FSI incidents in Queensland compared with 53.8 per cent in 2005. The number of recreational vessel FSI incidents (25) was also marginally under-represented when compared with the four-year average of 28.5 units of involvement.

Recreational vessel incidents resulted in 11 (64.7 per cent) of the 17 recorded fatalities in 2006. Of the 36 serious injuries recorded in 2006, 14 (38.9 per cent) resulted from incidents involving recreational vessels.

Recreational speedboats, recreational jet skis and recreational sailboats were the three most involved classes of recreational vessel in FSI incidents in 2006. There were 15 FSI incidents involving recreational speedboats, marginally above their previous four-year average of 13.25. Recreational speedboat incidents in 2006 resulted in eight fatalities and 12 serious injuries. The eight fatalities resulting from incidents involving recreational speedboats included three double fatalities.



There were only three reported FSI incidents involving recreational jet skis in 2006. These incidents resulted in five serious injuries. The number of FSI incidents involving recreational jet skis was down in 2006 compared with five incidents reported in 2005 and a previous four-year average involvement in 5.25 FSI incidents per year.

Recreational sailboat involvement in FSI incidents (3) in 2006 was only marginally above their previous four-year average involvement in 2.5 FSI incidents per year. There were three fatalities and one serious injury resulting from recreational sailboat incidents in 2006.

Analysis shows that the predominant characteristics of recreational vessel incidents involving fatality and/or serious injuries in 2006 were, as expected, incidents occurring in good visibility and clear conditions. These factors were involved in more than 50 per cent of recreational vessel FSI incidents. 45 per cent of recreational vessel incidents involving fatality and/or serious injuries in 2006 occurred in smooth water limits.

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 56 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 35 per cent of total recreational vessel incidents involving fatality or serious injury occurred in South-East Queensland—down markedly when compared with 62 per cent involvement in 2005. There were four recreational boating fatalities recorded in 2006 in South-East Queensland. A further six people were hospitalised as a result of reported recreational boating incidents in South-East Queensland in 2006—all from the Gold Coast 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.

6.2 Incidents involving commercial vessels

While the number of registered commercial vessels had been steadily increasing over the period 2000 to 2004 (7.8 per cent over the five-year period), registered commercial vessel numbers fell again in 2006 by 1.31 per cent, as shown earlier in Figure 11. In 2006, commercial vessels represented 2.64 per cent of Queensland's registered vessel fleet, but were involved in 429 (61.2 per cent) of the year's reported marine incidents (n=701). Figure 22 shows the relative involvement of the different types of commercial vessels in marine incidents in 2006, together with their previous four-year average involvement in incidents.

As was indicated in the 2005 report, the capsizing of commercial fishing vessels and fire onboard commercial passenger vessels have been identified among the highest ranked potential marine safety hazards. These types of incidents have the potential for catastrophic safety outcomes and present real safety management challenges.

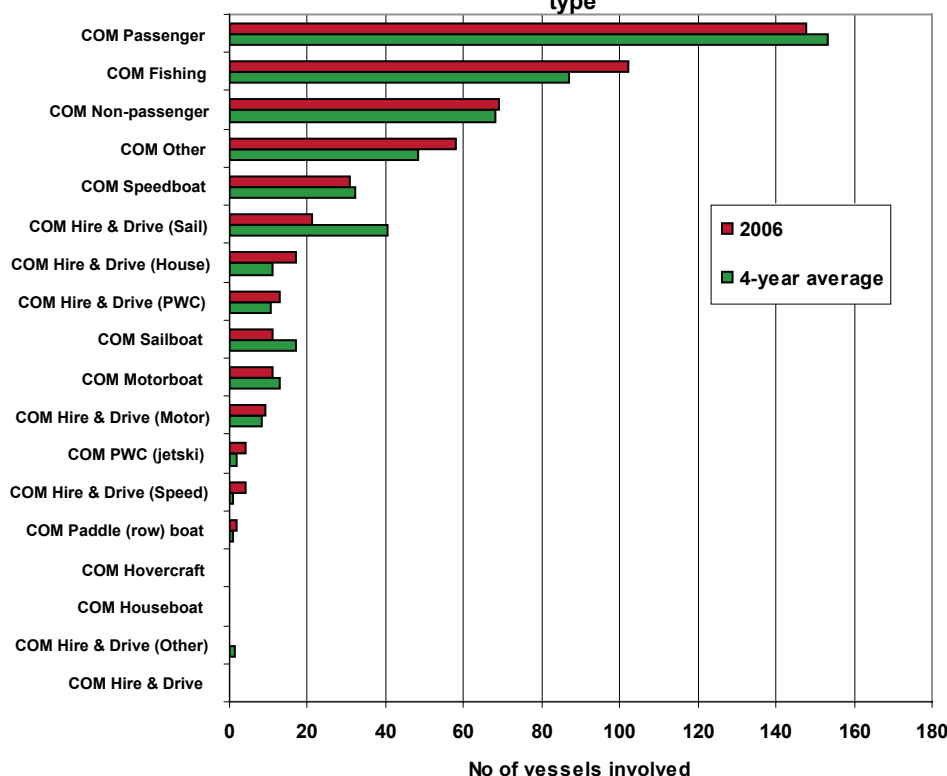
There were 90 (12.8 per cent) reported incidents involving commercial fishing ships in 2006 (n=701), resulting in five fatalities and two serious injuries. Only 14 of the commercial fishing ship incidents involved the capsizing of vessels, with one fatality resulting from one of these incidents. There were no reported serious injuries from commercial fishing ship capsizing incidents. The four remaining commercial fishing fatalities were the result of a crew member being lost overboard. Of the 138 reported commercial passenger vessel incidents in 2006, only four involved a fire onboard. None of these four incidents resulted in loss of lives or serious injuries.

Looking at the incidents that resulted in fatalities or serious injuries, commercial vessels were involved in 27 (57.5 per cent) of the State's 47 FSI incidents in 2006—marginally above their four-year average involvement in 23.5 FSI incidents.

Six fatalities resulted from marine incidents involving commercial vessels in 2006, compared with two fatalities in 2005 and a previous four-year average fatality rate of four. Of the 27 FSI incidents in 2006, 15 involved onboard incidents, six involved other personal injuries, five involved a person overboard and one involved a vessel capsizing. Of the 15 onboard incidents, five involved falls, four



Figure 22: Commercial vessels involved in all incidents in 2006 by type



involved crushing or pinching and the remaining six involved some other form of onboard injury. Of the other personal injury incidents, two were caused by the operation of the vessel, three involved a person being struck by the vessel or its propeller and one involved a water skiing injury.

The most frequently represented commercial vessels in FSI incidents in 2006 included commercial fishing vessels (seven), commercial speedboats (seven), commercial passenger vessels (six) and commercial–other (six). The seven commercial fishing vessel incidents resulted in five fatalities and two serious injuries. This compares with six commercial fishing vessel FSI incidents in 2005 and a previous four-year average of 6.5 commercial fishing vessel FSI incidents.

There were also seven commercial speedboats involved in FSI incidents in 2006. These seven incidents resulted in eight serious injuries. The incidents included five incidents involving onboard injuries and two personal injury incidents. One of these involved a person falling overboard from a water taxi and being hit by the vessel’s propeller.

There were 18 commercial vessels lost as a result of marine incidents in 2006. Notably, 13 (72 per cent) were commercial fishing vessels. One person lost his life as a result of the loss of one of these commercial fishing vessels.

From the perspective of regional involvement in the 27 reported commercial vessel FSI incidents, Cairns region recorded ten commercial vessel FSI incidents in 2006, compared with a previous four-year average of 5.25. Gold Coast region recorded six commercial vessel FSI incidents in 2006, the same number as recorded in 2005. Brisbane and Gladstone regions each recorded five commercial vessel FSI incidents in 2006.

Almost 60 per cent (16) of the commercial vessel FSI incidents occurred in offshore waters in 2006. This is over-represented when compared with the relative involvement of commercial vessels in FSI incidents in offshore waters in the previous four-year period (10). Seven of these incidents involved commercial fishing vessels and resulted in five fatalities and two serious injuries.



Incident study 9

Surf rescue – over and out!

The vessel: 3.75m commercial inflatable rescue boat (IRB)

The incident

Due to adverse conditions a popular Gold Coast beach had been closed by the local surf life saving club. When considering whether to reopen the beach to the public, it was decided to send two life savers out in one of the club's inflatable rescue boats to assess the surf conditions first hand.

While heading out through the breaking waves the IRB became airborne and in the words of one of the lifesavers was in a 'vertical position'. The female lifesaver in the front of the IRB fell backwards, colliding first with the head of the lifesaver driving the IRB before crashing heavily into the outboard motor.

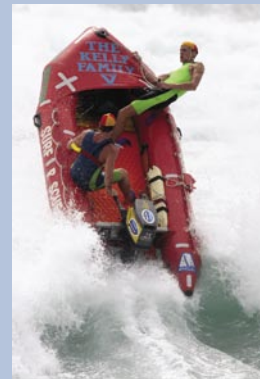
In the process, both life savers fell from the IRB into the surf. On witnessing the incident from the beach, a second IRB was deployed and attended to the two lifesavers in the surf.

The injured woman was taken to the beach where lifesavers stabilised her and provided first aid to a gash on her head pending the arrival of an ambulance. She was then transported to hospital, admitted, and operated upon immediately to correct internal and external injuries.

This was one of five serious injury incidents involving IRBs in 2006.

Safety insights

- Ongoing training of IRB crew is critical to the safe operation of IRBs, particularly in adverse or emergency conditions.
- Masters should not push their vessel beyond its operational limits or capabilities.
- Special care needs to be taken when operating vessels in conditions such as broken surf.



6.3 Incidents involving jet skis

Registered jet ski numbers in Queensland have risen by 175 per cent since January 2002. At the end of December 2006 there were 9,648 recreationally registered jet skis and 243 commercially registered jet skis in Queensland. Growth in registered jet ski numbers in 2006 alone was 8.3 per cent, compared with 4.44 per cent for registered vessels generally. Despite this rate of growth jet skis still only make up approximately 4.62 per cent of all registered vessels in Queensland.

According to historical reported marine incident data, jet skis have not figured significantly in reported marine incidents. This is attributable in some measure to under-reporting rather than an absence of incidents. Despite extensive media coverage about jet ski incidents and related injuries, there was a small decrease in the number of reported jet ski incidents during 2006.

In 2006, there were only 29 reported marine incidents involving jet skis in Queensland. This compares with the 31 jet ski incidents reported in 2005 and a previous four-year average of 25 jet ski incidents. Human factors were identified as contributing to more than 75 per cent of the 29 reported jet ski incidents in 2006. Inattention, operator error and excessive speed accounted for 77.3 per cent of the identified human contributing factors.

More than 50 per cent of the reported jet ski incidents involved a collision with another vessel. 31 per cent of jet ski incidents in 2006 occurred in offshore waters and approximately 27.5 per cent of the incidents occurred in smooth waters. This compares with more than 63 per cent of jet ski incidents occurring in smooth waters in 2005. Almost 80 per cent of the reported jet ski incidents occurred in clear weather conditions and in good visibility. 90 per cent of the incidents occurred in South-East Queensland. Of the 41 jet skis involved in the 29 reported incidents the majority (24) were recreationally registered jet skis. 17 were commercially operated jet skis including 13 commercial hire jet skis.

Incident study 10

Out of sight, but only for a moment!

The vessels: 6m recreational speedboat and a recreational jetski

The incident

While boating in the Southport Broadwater the master of a recreational speedboat noticed a jetski freestyling ahead of him. In an attempt to avoid the jetski the master altered the course of his boat away from the jetski. As he banked his boat to change course he lost sight of the jetski. Realising that he could no longer see the jetski he immediately cut the throttle. As he did so the jetski collided with the right side of his boat. As a result of the collision the jetski operator sustained a broken pelvis and both the master and a passenger on board the speedboat sustained neck and chest injuries requiring hospitalisation.



Safety insights

- Freestyling can be fun but carries with it the inherent risk of collisions.
- Maintaining a proper lookout and a safe and manageable speed are critical, especially when boating in close proximity to other vessels and in congested waterways.
- When boating, always expect the unexpected.

Turning to the more serious marine incidents, there were only three jet ski incidents reported in 2006 that resulted serious injuries. These three reported incidents resulted in five serious injuries requiring hospitalisation. There were no fatalities recorded from jet ski incidents in 2006. While jet skis currently comprise only 4.62 per cent of all registered vessels in Queensland, in 2006 jet ski incidents made up 7.3 per cent of reported incidents resulting in fatality or serious injury—down from 10.2 per cent involvement in 2005.

Of the three jet ski incidents that resulted in the hospitalisation of five persons, two involved collisions with other recreational vessels—one jet ski and one recreational speedboat. Four persons were hospitalised as a result of these two collisions—three from the collision with a stationary recreational speedboat. The third incident involved a passenger on a commercial hire and drive jet ski involved in an “ocean tour” off Noosa. The passenger sustained an undisclosed back injury while wave jumping off the Noosa bar entrance.

The incident resulting in the three serious injuries occurred in the Gold Coast region. This incident involved a collision between a recreational jet ski and a recreational speedboat. The jet ski was freestyling at the time. All three of the serious injury jet ski incidents occurred in what would be deemed ideal operational conditions—fine weather, good visibility and light winds. All three incidents occurred in the month of January, traditionally a peak recreational boating and jet skiing period.

Of the five persons seriously injured in jet ski incidents in 2006, four were male and one was female. Only two were operating the jet skis at the time. Of the three remaining seriously injured persons, one was a passenger on a commercial (hire and drive) jet ski and two were passengers on a stationary recreational speedboat.

Anecdotal evidence continues to indicate that there are significantly more serious injury jet ski incidents than are being reported. Jet ski marine incident data reported to Maritime Safety Queensland is therefore likely to be under-stating the true extent of serious injury jet ski incidents. This assumption is supported by recent national studies of fatal and non-fatal injury water transport incidents and an unpublished two-year study of jet ski injuries treated at the Gold Coast Hospital.

The involvement of jet skis in marine incidents will continue to be closely monitored and reported annually.



6.4 Boating safety in the Torres Strait

The 2005 annual marine incident report included a special feature on boating and related safety issues in the Torres Strait. The loss of seafarers in the Torres Strait is one of the highest ranked potential safety hazards identified by Maritime Safety Queensland as part of a recent strategic safety risk assessment.

As reported in 2005, the Australian Maritime Safety Authority in 2004/2005 recorded 45 marine EPIRB activations in the Torres Strait. Queensland Police sources indicate that there were a total of 117 search and rescue operations mounted in the Torres Strait in the same 12 month period, 36 for vessels reported as overdue.



A snapshot of reported marine incident data from Maritime Safety Queensland's marine incident database reveals a contradictory picture of boating safety in the Torres Strait. Between 1997 and 2006, there were 16 reported marine incidents in the Torres Strait that resulted in the loss of 11 lives and the hospitalisation of a further 10 people. The fatal incidents included the July 2004 Badu Island tragedy where two adults and a child lost their lives in one incident.



The data mentioned above does not include the tragic loss of the Commonwealth Immigration vessel 'Malu Sara' in the Torres Strait in October 2005. This incident alone resulted in the loss of four adults and one child.

Clearly the data does not reveal the real number of incidents occurring day-to-day in the region. The reporting of marine incidents in the region is generally poor, apart from those incidents that result in death.

Maritime Safety Queensland received only 16 reports of marine incidents having occurred in the Torres Strait area in 2006. Seven of these incidents occurred in the offshore waters of Torres Strait and two of the incidents resulted in two fatalities. Of the 16 reported marine incidents, six involved vessels grounding, four were collision incidents and two were person overboard incidents.



During the year work has continued on the development and implementation of the Torres Strait Marine Safety Program. In late 2006, Maritime Safety Queensland staff met with 11 Torres Strait Island Councils to discuss boating safety in the Torres Strait. Together they worked to identify community boating safety priorities and to refine the suite of activities under the Torres Strait Marine Safety Program. Island Council representatives unanimously raised access to training as one the most significant hindrances to improving local boating safety culture.



As a consequence, Maritime Safety Queensland is working collaboratively with TAFE to develop a special Torres Strait version of the recreational BoatSafe training program. This special training course will highlight key issues faced by seafarers in the Torres Straits such as motor maintenance and breakdown prevention, safety equipment and its use, emergency procedures at sea, vessel stability, and pre-trip planning. The longer two-day training course is expected to commence in June 2007 and will be progressively delivered across the Torres Strait region.

Maritime Safety Queensland is also working with Thursday Island State High School to develop a tailored school-based BoatSafe course for all Year 10 students. Students completing this course will be eligible for a recreational marine driver's licence. Work is also underway with Education Queensland to develop educational material on boating safety for Year Six students in the Torres Strait. This material is expected to be taught across the region from Term 3, 2007.

A census of community, recreational and fishing vessels is planned for mid 2007 to better



understand the Torres boating fleet. The information gathered during the census will assist in designing and customising training, education and other boating safety initiatives for the Torres Strait.

Work is also continuing with the Australian Maritime Safety Authority and with safety equipment wholesalers and retailers to determine the most equitable and cost effective strategy for supplying adequate boating safety equipment across the region, particularly the new generation 407 EPIRBs.





Marine incident related tables

In the following pages, 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.

Notes:

The following abbreviations are used throughout the tables.

Abbreviation	Description
BN	Brisbane region
CN	Cairns region
COM	Commercially operated
GC	Gold Coast region ¹
GL	Gladstone region
House	Houseboat
MK	Mackay region
Motor	Motorboat – displacement hull vessel, not capable of planing
PWC	Personal watercraft
REC	Recreationally operated
Sail	Sailboat
Speed	Speedboat – vessel with a planing hull
TV	Townsville region

¹ The Gold Coast region was only established for reporting purposes in 2000.

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Table 1 Marine fatalities per 1,000,000 persons 1976 to 2005 by state and territory

State / territory	76-79	80-84	85-89	90-94	95-99	2000-04	2005
New South Wales	8.45	5.10	4.27	3.29	2.65	2.03	1.03
Victoria	9.03	5.16	4.37	4.10	2.04	2.08	0.60
Queensland	12.31	5.23	4.02	5.14	2.59	1.83	1.01
South Australia	13.18	7.35	4.59	3.99	2.43	0.68	3.89
West Australia	10.09	8.70	4.94	4.71	4.12	2.56	1.49
Tasmania	34.82	26.03	14.70	15.59	15.96	4.23	2.06
Northern Territory	25.81	16.94	11.52	22.53	5.38	6.35	0.00
Australian Capital Territory	11.63	0.86	2.27	2.05	0.65	1.55	3.08

Source: Australian Bureau of Statistics

Table 2 Incidents involving fatalities and serious injuries 2001 - 2006 and year 2006 by region

Incidents	2001	2002	2003	2004	2005	2006	GC	BN	GL	MK	TV	CN
No of incidents involving fatalities	9	9	7	10	11	14	1	3	3	1	0	6
No of incidents involving serious injuries	36	51	22	36	41	33	10	4	7	3	0	9
Fatality/serious injury incidents	45	60	29	46	52	47	11	7	10	4	0	15

Table 3 Fatalities and serious injuries 2001 - 2006 and year 2006 by region

Fatalities and serious injuries	2001	2002	2003	2004	2005	2006	GC	BN	GL	MK	TV	CN
No of fatalities	12	10	7	12	13	17	1	4	4	1	0	7
No of serious injuries	43	61	23	40	48	36	12	4	7	4	0	9
Total fatalities and serious injuries	55	71	30	52	61	53	13	8	11	5	0	16

Table 4 Environmental factors contributing to fatal and serious injury incidents 2001 - 2006 and year 2006 by region

Environmental factors	2001	2002	2003	2004	2005	2006	GC	BN	GL	MK	TV	CN
Abnormal tidal conditions	0	0	0	0	0	0	0	0	0	0	0	0
Bar conditions	0	1	1	1	2	2	0	2	0	0	0	0
Floating or submerged object	1	1	0	0	0	0	0	0	0	0	0	0
Hazardous season (cyclones etc)	0	0	0	1	0	0	0	0	0	0	0	0
Hazardous waters - coral reefs	1	1	0	0	1	1	0	0	0	0	0	1
Hazardous waters - lack navigation aids	0	0	0	0	0	0	0	0	0	0	0	0
Hazardous waters - shifting channels	1	1	0	0	0	0	0	0	0	0	0	0
Hazardous waters - uncharted hazards	1	1	0	0	1	1	0	1	0	0	0	0
Heavy traffic area	0	0	1	0	0	0	0	0	0	0	0	0
Other	3	1	2	3	1	1	1	0	0	0	0	0
Poor visibility	0	1	0	2	0	1	0	1	0	0	0	0
Sea state	5	7	6	7	11	10	4	2	1	2	0	1
Wash of passing vessel	1	2	1	3	2	0	0	0	0	0	0	0
Wind	1	3	1	1	4	1	0	1	0	0	0	0
Total environmental factors attribution	14	19	12	18	22	17	5	7	1	2	0	2

Table 5 Human factors contributing to fatal and serious injury incidents 2001 - 2006 and year 2006 by region

Human factors	2001	2002	2003	2004	2005	2006	GC	BN	GL	MK	TV	CN
Alcohol or drugs	1	0	2	2	2	6	1	0	2	0	0	3
Commercial pressure	1	0	0	1	1	0	0	0	0	0	0	0
Excessive speed	4	3	3	4	4	3	0	0	1	0	0	2
Fatigue	2	0	1	1	0	0	0	0	0	0	0	0
Inadequate training of crew	2	3	4	2	8	6	0	0	1	0	0	5
Inappropriate Harbour/Port Authority advice	0	0	0	0	0	0	0	0	0	0	0	0
Inappropriate advice to ship - Pilot	0	0	0	0	0	0	0	0	0	0	0	0
Inappropriate Vessel Traffic System advice	0	0	0	0	0	0	0	0	0	0	0	0
Inappropriate instructions to crew - other	0	2	1	0	2	2	0	0	0	0	0	2
Poor communication of instructions to crew	0	1	0	0	0	0	0	0	0	0	0	0
Inattention	9	14	6	19	20	12	1	2	3	0	0	6
Insecure mooring	0	1	0	0	0	0	0	0	0	0	0	0
Insufficient crew numbers	0	0	0	1	0	0	0	0	0	0	0	0
Insufficient fuel	0	0	0	0	0	0	0	0	0	0	0	0
Insufficient maintenance	0	0	0	1	0	0	0	0	0	0	0	0
Insufficient planning	0	0	0	1	1	1	0	0	0	0	0	1
Navigation error-failure to keep proper lookout	0	2	1	3	0	4	0	1	1	1	0	1
Navigation error-lack of knowledge/experience	1	2	0	2	2	0	0	0	0	0	0	0
Navigation error-other	1	0	1	0	0	0	0	0	0	0	0	0
Navigation error-violation of Collision regs	1	0	2	0	0	0	0	0	0	0	0	0
Operational error-other	13	23	11	9	9	8	4	0	1	3	0	0
Overloading	0	0	0	0	1	0	0	0	0	0	0	0
Poor communications	1	1	0	0	1	0	0	0	0	0	0	0
Poor ship to shore communications	0	0	0	0	0	0	0	0	0	0	0	0
Violation of standard procedures	0	6	1	1	0	0	0	0	0	0	0	0
Violation of statutory rules or standards	0	0	1	1	3	0	0	0	0	0	0	0
Total human factors attribution	36	58	34	48	54	42	6	3	9	4	0	20

Table 6 Material factors contributing to fatal and serious injury incidents 2001 - 2006 and year 2006 by region

Material factors	2001	2002	2003	2004	2005	2006	GC	BN	GL	MK	TV	CN
Bridge or navigation failure	0	0	0	0	0	1	0	0	1	0	0	0
Electrical failure	1	0	0	0	0	0	0	0	0	0	0	0
Equipment failure - other	1	2	0	0	1	2	0	0	0	0	0	2
Fuel or gas leak	1	0	0	1	2	0	0	0	0	0	0	0
Hull failure	1	0	0	0	0	1	0	0	1	0	0	0
Inadequate stability - other	1	0	0	0	0	1	0	1	0	0	0	0
Inadequate stability - overloading	0	0	0	0	1	0	0	0	0	0	0	0
Inadequate stability - shifting cargo	0	1	0	0	0	0	0	0	0	0	0	0
Inappropriate hull or equipment-construction fault	0	1	0	0	1	0	0	0	0	0	0	0
Inappropriate hull or equipment-design fault	0	1	0	1	0	0	0	0	0	0	0	0
Insufficient maintenance of hull or equipment	0	0	0	0	1	0	0	0	0	0	0	0
Insufficient safety equipment	0	0	0	0	0	0	0	0	0	0	0	0
Machinery failure	0	1	1	2	2	0	0	0	0	0	0	0
Other	3	1	2	3	0	1	0	0	1	0	0	0
Shore structure badly designed/maintained	0	0	0	0	0	0	0	0	0	0	0	0
Total material factors attribution	8	7	3	7	8	6	0	1	3	0	0	2



Table 7 Fatal and serious injury incident type 2001 - 2006 and year 2006 by region

Incident type classifications	2001	2002	2003	2004	2005	2006	GC	BN	GL	MK	TV	CN
Capsizing	1	2	0	1	3	1	0	0	1	0	0	0
Capsizing flooding	0	0	0	0	0	0	0	0	0	0	0	0
Capsizing sinking	0	1	1	4	0	2	0	0	1	0	0	1
Capsizing swamping	2	3	0	3	3	1	0	1	0	0	0	0
Collision between ships	2	10	3	6	4	4	1	1	0	2	0	0
Collision with a fixed object	2	2	0	4	1	1	0	0	1	0	0	0
Collision with an animal	0	0	0	0	0	0	0	0	0	0	0	0
Collision with floating object	2	0	0	2	0	1	1	0	0	0	0	0
Collision with overhead obstruction	0	0	0	0	0	0	0	0	0	0	0	0
Collision with submerged object	0	1	0	0	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	0	0	1	0	0	0	0	0	0	0
Fire	0	1	1	1	1	0	0	0	0	0	0	0
Grounding intentional	0	0	0	0	0	0	0	0	0	0	0	0
Grounding unintentional	1	0	1	1	3	1	0	0	1	0	0	0
Loss of ship	0	2	0	0	0	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	0	3	1	4	3	4	0	1	0	0	0	3
Onboard incident falls within ship	6	4	4	4	9	7	4	1	1	0	0	1
Onboard incident other onboard injury	5	5	2	0	7	6	1	0	2	0	0	3
Other	2	0	0	0	1	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	1	8	4	5	7	2	1	1	0	0	0	0
Other personal injury diving incident	0	1	0	1	0	0	0	0	0	0	0	0
Other personal injury hit by propellor or ship	3	3	4	2	7	9	3	1	2	0	0	3
Other personal injury parasailing incident	1	0	0	0	0	0	0	0	0	0	0	0
Other personal injury water ski incident	5	4	2	2	1	1	0	0	0	1	0	0
Person overboard	8	9	6	6	1	7	0	1	1	1	0	4
Structural failure	1	0	0	0	0	0	0	0	0	0	0	0
Incident types distribution	44	60	29	46	52	47	11	7	10	4	0	15

Table 8 Location of fatal and serious injury incidents 2001 - 2006 and year 2006 by region

Location classifications	2001	2002	2003	2004	2005	2006	GC	BN	GL	MK	TV	CN
Not specified	1	0	0	0	0	0	0	0	0	0	0	0
Inland waters	12	13	2	5	6	3	0	0	2	0	0	1
Offshore	10	19	6	16	16	20	7	3	3	0	0	7
Partially smooth waters	10	10	6	6	7	7	2	0	2	2	0	1
Smooth waters	12	18	15	19	23	17	2	4	3	2	0	6
Distribution by location classifications	45	60	29	46	52	47	11	7	10	4	0	15

Table 9 Fatal and serious injury incidents by month 2001 - 2006 and year 2006 by region

Months	2001	2002	2003	2004	2005	2006	GC	BN	GL	MK	TV	CN
January	3	11	2	4	5	10	4	1	2	1	0	2
February	0	4	2	7	1	2	1	0	1	0	0	0
March	5	2	1	2	7	3	1	0	0	1	0	1
April	4	5	1	6	4	4	1	1	0	1	0	1
May	3	5	2	3	5	5	2	0	0	0	0	3
June	2	5	2	2	5	2	1	0	0	0	0	1
July	6	8	3	4	5	5	0	0	3	0	0	2
August	6	3	2	2	6	2	0	0	0	0	0	2
September	1	8	3	2	2	3	0	1	1	0	0	1
October	6	2	4	6	1	4	0	2	0	0	0	2
November	5	1	2	3	3	5	0	1	3	1	0	0
December	4	6	5	5	8	2	1	1	0	0	0	0
Fatality/serious injury incidents	45	60	29	46	52	47	11	7	10	4	0	15

Table 10 Fatal and serious injury incidents 2001 - 2006 by region

Region	2001	2002	2003	2004	2005	2006
Gold Coast	10	14	7	11	14	11
Brisbane	13	20	7	14	14	7
Gladstone	5	4	5	6	6	10
Mackay	7	8	6	2	9	4
Townsville	1	2	3	1	2	0
Cairns	9	12	1	12	7	15
Not specified	0	0	0	0	0	0
Fatality/serious injury incidents by regions	45	60	29	46	52	47

Table 11 Fatal and serious injury incidents by time of day 2001 - 2006

Time of day	2001	2002	2003	2004	2005	2006
Not specified	4	2	1	3	3	2
Dawn	1	0	2	3	0	1
Day time	33	44	20	28	40	26
Dusk	1	5	2	3	3	4
Night time	6	9	4	9	6	14
Fatality/serious injury incidents by TOD	45	60	29	46	52	47



Table 12 No. of ships involved in fatal and serious injury incidents 2001 - 2006 by ship type

Ship type	2001	2002	2003	2004	2005	2006
Not specified	0	0	0	0	0	0
COM Fishing	6	10	3	8	7	7
COM Hire & Drive	0	0	0	0	0	0
COM Hire & Drive (House)	0	0	0	0	2	1
COM Hire & Drive (Motor)	2	2	0	0	1	0
COM Hire & Drive (Other)	0	0	0	1	0	0
COM Hire & Drive (PWC)	0	2	1	0	1	1
COM Hire & Drive (Sail)	0	0	1	1	0	0
COM Hire & Drive (Speed)	0	0	0	1	0	0
COM Houseboat	0	0	0	0	0	0
COM Hovercraft	0	0	0	0	0	0
COM Motorboat	1	1	0	0	1	1
COM Non-passenger	1	1	2	2	4	3
COM Other	1	1	1	1	0	6
COM Paddle (row) boat	0	0	0	0	0	0
COM Passenger	11	8	5	5	7	5
COM PWC (jetski)	1	2	0	0	0	0
COM Sailboat	0	1	0	1	2	0
COM Speedboat	5	8	4	2	3	7
REC Houseboat	0	0	0	1	0	0
REC Motorboat	6	3	6	4	6	2
REC Other	2	0	0	0	0	0
REC Paddle (row) boat	1	1	0	2	2	1
REC PWC (jetski)	4	4	1	9	6	3
REC Sailboat	2	4	3	1	2	3
REC Speedboat	6	22	11	13	13	16
No of ships by ship types	49	70	38	52	57	56

Table 13 Visibility in fatal and serious injury incidents 2001 - 2006 and year 2006 by region

Visibility	2001	2002	2003	2004	2005	2006	GC	BN	GL	MK	TV	CN
Not specified	5	13	5	9	5	11	0	1	2	1	0	7
Poor	3	2	2	2	2	2	0	1	0	0	0	1
Fair	3	2	2	10	5	5	2	0	1	0	0	2
Good	34	43	20	25	40	29	9	5	7	3	0	5
Fatality/serious injury incidents	45	60	29	46	52	47	11	7	10	4	0	15

Table 14 Weather in fatal and serious injury incidents 2001 - 2006 and year 2006 by region

Weather	2001	2002	2003	2004	2005	2006	GC	BN	GL	MK	TV	CN
Not specified	5	9	4	8	5	9	0	1	2	1	0	5
Clear	32	40	21	30	35	28	9	3	8	3	0	5
Cloudy	6	4	3	3	5	6	1	1	0	0	0	4
Flood	0	0	0	0	0	0	0	0	0	0	0	0
Hazy	1	1	0	4	2	1	1	0	0	0	0	0
Other	0	3	1	0	3	2	0	1	0	0	0	1
Rain	1	3	0	1	2	1	0	1	0	0	0	0
Fatality/serious injury incidents	45	60	29	46	52	47	11	7	10	4	0	15

Table 15 Wind in fatal and serious injury incidents 2001 - 2006 and year 2006 by region

Wind	2001	2002	2003	2004	2005	2006	GC	BN	GL	MK	TV	CN
Not specified	4	11	5	8	2	10	1	1	2	0	0	6
No wind	5	9	1	3	6	2	0	0	2	0	0	0
Light (up to force 2 / 1-7 knots)	22	16	8	18	14	15	4	3	3	1	0	4
Moderate (force 3-4 / 8-16 knots)	7	14	13	12	19	13	5	1	2	1	0	4
Strong (force 5-7 / 17-33 knots)	7	10	2	2	8	5	1	1	1	1	0	1
Gale (force 8 and above / more than 33 knots)	0	0	0	3	3	2	0	1	0	1	0	0
Fatality/serious injury incidents	45	60	29	46	52	47	11	7	10	4	0	15

Table 16 All marine incidents 2001 - 2006 and year 2006 by region

Incidents	2001	2002	2003	2004	2005	2006	GC	BN	GL	MK	TV	CN
Reported marine incidents	610	648	661	632	645	701	89	204	139	105	42	122

Table 17 Environmental factors contributing to marine incidents 2001 - 2006 and year 2006 by region

Environmental factors	2001	2002	2003	2004	2005	2006	GC	BN	GL	MK	TV	CN
Abnormal tidal conditions	15	5	4	9	19	10	1	3	0	1	0	5
Bar conditions	2	12	19	16	14	28	0	24	1	0	0	3
Floating or submerged object	17	12	12	19	21	19	3	9	2	2	0	3
Hazardous season (cyclones etc)	1	0	3	7	1	9	0	2	0	0	0	7
Hazardous waters - coral reefs	28	24	24	26	21	18	0	2	5	8	1	2
Hazardous waters - lack navigation aids	1	1	2	1	1	3	0	1	0	1	0	1
Hazardous waters - shifting channel	8	5	7	9	2	10	0	2	2	0	0	6
Hazardous waters - uncharted hazards	5	4	4	11	11	10	1	6	1	2	0	0
Heavy traffic area	2	7	2	9	5	5	0	2	0	2	0	1
Other environmental contributing factor	34	26	23	42	18	9	2	1	0	4	0	2
Poor visibility	9	16	12	17	12	22	0	11	2	3	3	3
Sea state	66	76	79	92	115	113	12	42	17	10	12	20
Wash of passing vessel	13	15	11	23	26	17	7	6	0	1	0	3
Wind	23	43	72	78	91	87	6	31	11	14	7	18
Total environmental factors attribution	224	246	274	359	357	360	32	142	41	48	23	74



Table 18 Human factors contributing to marine incidents 2001 - 2006 and year 2006 by region

Human factors	2001	2002	2003	2004	2005	2006	GC	BN	GL	MK	TV	CN
Alcohol or drugs	6	6	8	8	6	12	1	3	2	3	0	3
Commercial pressure	9	6	5	13	10	8	0	2	0	0	0	6
Excessive speed	17	17	12	24	28	23	1	7	4	1	4	6
Fatigue	9	2	7	5	4	5	0	4	0	0	0	1
Inadequate training of crew	18	14	17	14	33	38	5	9	8	2	1	13
Inappropriate Harbour/Port Authority advice	2	0	0	0	1	1	0	0	0	1	0	0
Inappropriate advice to ship - Pilot	0	2	0	2	0	0	0	0	0	0	0	0
Inappropriate Vessel Traffic System advice	1	1	1	0	1	0	0	0	0	0	0	0
Inappropriate instructions to crew - other	1	6	7	1	5	13	0	2	0	4	1	6
Poor communication of instructions to crew	3	4	2	3	6	6	0	2	0	1	0	3
Inattention	67	65	77	114	127	121	4	53	22	6	3	33
Insecure mooring	25	20	31	30	27	31	0	1	11	6	1	12
Insufficient crew numbers	1	1	1	5	2	6	0	3	0	1	1	1
Insufficient fuel	1	3	1	0	4	4	0	2	0	0	0	2
Insufficient maintenance	9	7	12	17	16	24	1	11	4	1	3	4
Insufficient planning	7	10	20	22	29	22	0	8	2	2	1	9
Navigation error-failure to keep proper lookout	23	25	48	62	54	55	1	21	14	7	4	8
Navigation error-lack of knowledge/experience	32	16	39	45	40	51	1	19	13	7	4	7
Navigation error-other	30	27	25	38	38	49	0	18	7	14	4	6
Navigation error-violation of Collision regs	16	15	27	45	34	32	0	17	9	1	1	4
Operational error-other	107	122	148	134	165	131	34	45	13	20	6	13
Overloading	1	0	2	0	5	5	0	4	0	0	1	0
Poor communications	5	9	3	13	19	20	0	12	2	2	0	4
Poor ship to shore communications	0	2	3	2	2	2	0	0	0	0	0	2
Violation of standard procedures	13	21	29	20	21	17	0	8	0	2	0	7
Violation of statutory rules or standards	11	24	23	35	34	30	3	15	2	1	0	9
Total human factors attribution	414	425	548	652	711	706	51	266	113	82	35	159

Table 19 Material factors contributing to marine incidents 2001 - 2006 and year 2006 by region

Material factors	2001	2002	2003	2004	2005	2006	GC	BN	GL	MK	TV	CN
Bridge or navigation failure	2	1	4	3	7	6	1	2	1	0	0	2
Electrical failure	18	15	9	12	2	13	0	3	1	3	3	3
Equipment failure - other	25	24	31	35	34	31	2	7	6	6	2	8
Fuel or gas leak	7	3	5	4	6	7	1	1	2	0	2	1
Hull failure	15	17	16	11	9	21	0	5	6	2	2	6
Inadequate stability - other	5	0	1	2	5	11	0	3	0	2	2	4
Inadequate stability - overloading	1	0	1	1	4	3	0	2	0	0	1	0
Inadequate stability - shifting cargo	1	2	2	1	5	1	0	0	0	0	1	0
Inappropriate hull or equipment-construction fault	4	6	4	2	5	10	1	2	3	2	1	1
Inappropriate hull or equipment-design fault	7	5	9	16	8	11	0	3	2	4	1	1
Insufficient maintenance of hull or equipment	6	9	4	8	12	18	1	6	6	4	0	1
Insufficient safety equipment	0	5	3	2	5	2	0	2	0	0	0	0
Machinery failure	34	49	56	51	47	71	5	17	22	12	4	11
Other material contributing factor	34	31	30	45	26	18	1	6	3	3	1	4
Shore structure badly designed/maintained	3	5	3	5	6	2	0	1	0	0	0	1
Total material factors attribution	162	172	178	198	181	225	12	60	52	38	20	43

Table 20 Incident type 2001 - 2006 and year 2006 by region

Incident type	2001	2002	2003	2004	2005	2006	GC	BN	GL	MK	TV	CN
Capsizing	16	14	12	13	13	20	2	7	4	3	0	4
Capsizing flooding	12	8	9	7	7	12	1	3	4	1	2	1
Capsizing sinking	23	28	21	29	29	53	3	18	7	4	7	14
Capsizing swamping	22	30	41	36	32	37	5	23	3	2	2	2
Collision between ships	119	119	126	129	139	134	27	42	24	20	5	16
Collision with a fixed object	35	42	35	45	47	39	3	14	7	5	0	10
Collision with an animal	1	2	2	2	2	2	0	0	0	2	0	0
Collision with floating object	8	11	8	11	10	9	1	3	2	0	0	3
Collision with overhead obstruction	0	2	0	1	1	3	1	2	0	0	0	0
Collision with submerged object	15	18	22	21	22	17	4	6	2	3	1	1
Collision with wharf	20	19	22	22	14	14	0	3	7	1	1	2
Explosion	5	1	1	2	3	3	0	2	0	1	0	0
Fire	28	17	32	25	14	24	5	4	5	3	3	4
Grounding intentional	2	2	2	3	1	6	0	3	0	1	0	2
Grounding unintentional	115	94	128	121	117	116	6	17	33	29	9	22
Loss of ship	1	7	11	0	0	1	0	0	0	0	1	0
Loss of stability	3	0	2	1	1	3	0	2	0	0	1	0
Onboard incident crushing or pinching	1	5	5	6	7	11	2	2	1	0	1	5
Onboard incident falls within ship	19	18	20	14	24	29	9	6	4	0	2	8
Onboard incident other onboard injury	15	10	11	9	23	18	4	3	4	2	1	4
Other	11	62	47	28	30	34	1	6	11	12	2	2
Other - Close Call	40	50	29	46	39	30	1	19	5	0	0	5
Other - Crime Issue	10	2	1	1	1	2	0	1	1	0	0	0
Other - Ship Adrift	20	10	13	6	6	16	0	1	4	6	1	4
Other personal injury caused by operation of ship	7	18	10	13	16	7	4	2	0	0	0	1
Other personal injury diving incident	1	2	2	2	1	0	0	0	0	0	0	0
Other personal injury hit by propellor or ship	5	6	10	5	8	12	3	1	3	1	1	3
Other personal injury parasailing incident	1	2	0	0	0	0	0	0	0	0	0	0
Other personal injury water ski incident	8	5	5	4	5	5	1	2	0	1	1	0
Person overboard	25	23	21	18	21	30	6	9	3	3	1	8
Structural failure	22	21	13	12	12	14	0	3	5	5	0	1
All incidents	610	648	661	632	645	701	89	204	139	105	42	122

Table 21 Locations of incidents 2001 - 2006 and year 2006 by region

Location	2001	2002	2003	2004	2005	2006	GC	BN	GL	MK	TV	CN
Not specified	1	1	3	0	9	2	0	1	1	0	0	0
Inland waters	102	101	78	74	46	55	20	22	4	1	5	3
Offshore	115	137	135	124	138	181	19	48	38	20	15	41
Partially smooth waters	151	153	195	154	146	171	9	38	29	68	13	14
Smooth waters	241	256	250	280	306	292	41	95	67	16	9	64
All incidents	610	648	661	632	645	701	89	204	139	105	42	122

Table 22 Incidents by month 2001 - 2006 and year 2006 by region

Month	2001	2002	2003	2004	2005	2006	GC	BN	GL	MK	TV	CN
January	59	60	54	59	60	99	18	32	20	15	4	10
February	40	54	39	53	46	48	7	12	14	8	0	7
March	58	57	57	52	65	58	9	15	11	9	2	12
April	54	57	47	57	36	48	7	18	4	8	4	7
May	38	46	47	49	49	51	12	12	5	7	2	13
June	50	63	60	51	46	49	4	9	10	9	8	9
July	48	37	57	43	57	69	2	20	14	8	8	17
August	66	48	61	48	58	64	6	10	16	15	0	17
September	42	61	45	48	62	48	4	11	13	8	4	8
October	51	58	66	61	54	60	5	22	9	3	5	16
November	58	52	64	53	49	52	3	25	12	8	0	4
December	46	55	64	58	63	55	12	18	11	7	5	2
All incidents	610	648	661	632	645	701	89	204	139	105	42	122



Table 23 Incidents 2001 - 2006 by region

Region	2001	2002	2003	2004	2005	2006
Gold Coast	75	79	77	80	92	89
Brisbane	198	197	195	205	203	204
Gladstone	76	87	104	80	104	139
Mackay	128	123	136	133	114	105
Townsville	51	59	48	44	39	42
Cairns	82	103	101	90	93	122
Region not advised	0	0	0	0	0	0
All incidents	610	648	661	632	645	701

Table 24 Damage category 2001 - 2006 and year 2006 by region

Damage	2001	2002	2003	2004	2005	2006	GC	BN	GL	MK	TV	CN
Not specified	1	2	11	0	7	83	13	19	29	0	14	8
Damage to Property Only	51	67	70	72	61	59	6	23	16	2	1	11
No Damage	226	271	245	212	251	199	20	67	24	37	7	44
Ship Damaged	285	267	299	315	292	312	46	86	57	61	14	48
Ship Lost	47	41	36	33	34	48	4	9	13	5	6	11
All incidents	610	648	661	632	645	701	89	204	139	105	42	122

Table 25 Incidents by time of day 2001 - 2006 and year 2006 by region

Time of day	2001	2002	2003	2004	2005	2006	GC	BN	GL	MK	TV	CN
Not specified	22	41	37	43	50	37	3	10	6	3	3	12
Dawn	21	25	27	23	19	32	3	14	4	5	1	5
Day	386	408	423	395	414	455	66	134	87	67	26	75
Dusk	59	58	55	43	51	54	5	21	13	5	3	7
Night	122	116	119	128	111	123	12	25	29	25	9	23
All incidents	610	648	661	632	645	701	89	204	139	105	42	122

Table 26 No. of ships in incidents 2001 - 2006 by ship type

Ship type	2001	2002	2003	2004	2005	2006
COM Fishing	91	93	100	86	69	102
COM Hire & Drive	0	0	0	0	0	0
COM Hire & Drive (House)	4	12	8	13	12	17
COM Hire & Drive (Motor)	10	10	11	3	9	9
COM Hire & Drive (Other)	2	1	2	2	1	0
COM Hire & Drive (PWC)	4	9	13	6	14	13
COM Hire & Drive (Sail)	46	30	50	49	33	21
COM Hire & Drive (Speed)	0	0	1	3	0	4
COM Houseboat	11	0	0	1	0	0
COM Hovercraft	0	0	0	0	0	0
COM Motorboat	8	8	18	9	17	11
COM Non-passenger	29	66	92	59	56	69
COM Other	66	89	25	40	40	58
COM Paddle (row) boat	0	2	0	0	2	2
COM Passenger	161	144	167	142	161	148
COM PWC (jetski)	9	4	2	0	1	4
COM Sailboat	15	13	16	25	14	11
COM Speedboat	12	31	33	27	38	31
REC Houseboat	9	5	7	8	6	10
REC Motorboat	66	66	82	97	120	122
REC Other	30	7	3	2	1	4
REC Paddle (row) boat	2	4	4	6	6	7
REC PWC (jetski)	17	24	12	23	24	24
REC Sailboat	59	96	106	88	95	114
REC Speedboat	56	98	89	84	87	109
Not specified	32	0	0	0	0	0
Unknown ship type	10	11	0	2	4	8
No of ships by ship type	749	823	841	775	810	898

Table 27 Visibility in incidents 2001 - 2006 and year 2006 by region

Visibility	2001	2002	2003	2004	2005	2006	GC	BN	GL	MK	TV	CN
Not specified	33	89	80	87	77	101	4	37	9	11	6	34
Poor	61	50	58	48	54	53	2	9	10	12	9	11
Fair	112	66	73	74	61	69	9	10	8	18	3	21
Good	404	443	450	423	453	478	74	148	112	64	24	56
All incidents	610	648	661	632	645	701	89	204	139	105	42	122

Table 28 Weather in incidents 2001 - 2006 and year 2006 by region

Weather	2001	2002	2003	2004	2005	2006	GC	BN	GL	MK	TV	CN
Not specified	31	69	63	58	60	71	1	27	5	8	3	27
Clear	427	447	430	433	418	436	71	124	104	60	21	56
Cloudy	72	63	92	68	77	96	10	28	15	15	7	21
Flood	1	0	2	3	6	3	0	2	0	0	0	1
Hazy	16	27	20	18	28	29	2	7	7	6	2	5
Other weather	8	9	7	10	13	16	1	11	0	3	0	1
Rain	55	33	47	42	43	50	4	5	8	13	9	11
All incidents	610	648	661	632	645	701	89	204	139	105	42	122



Table 29 Wind in incidents 2001 - 2006 and year 2006 by region

Wind	2001	2002	2003	2004	2005	2006	GC	BN	GL	MK	TV	CN
Not specified	37	66	56	58	57	73	1	25	5	7	2	33
No wind	47	56	51	44	35	53	8	20	17	1	3	4
Light (up to force 2 / 1-7 knots)	217	196	185	204	180	202	40	66	44	24	6	22
Moderate (force 3-4 / 8-16 knots)	186	209	237	173	217	217	32	61	42	40	19	23
Strong (force 5-7 / 17-33 knots)	104	109	125	129	123	129	6	26	27	30	12	28
Gale (force 8 and above / more than 33 knots)	19	12	7	24	33	27	2	6	4	3	0	12
All incidents	610	648	661	632	645	701	89	204	139	105	42	122

Table 30 Commercial and recreational registrations 2001 - 2006 by region

Recreational registrations						
Region	2001	2002	2003	2004	2005	2006
Gold Coast	20130	22052	23813	25641	27184	28300
Brisbane	74018	75514	78798	82634	86332	89468
Gladstone	25826	29270	31018	32980	34771	37148
Mackay	11046	12632	13270	14077	14962	16036
Townsville	14989	16618	17141	17627	18389	19234
Cairns	16143	15829	16264	16874	17500	18115
Totals	162152	171915	180304	189833	199138	208301

Commercial registrations						
Region	2001	2002	2003	2004	2005	2006
Gold Coast	727	763	825	891	951	934
Brisbane	1596	1580	1636	1654	1504	1437
Gladstone	752	778	777	790	867	903
Mackay	751	765	776	760	750	737
Townsville	466	485	468	467	485	518
Cairns	1123	1178	1165	1186	1177	1130
Totals	5415	5549	5647	5748	5734	5659

Total registrations						
Region	2001	2002	2003	2004	2005	2006
Gold Coast	20857	22815	24638	26532	28135	29234
Brisbane	75614	77094	80434	84288	87836	90905
Gladstone	26578	30048	31795	33770	35638	38051
Mackay	11797	13397	14046	14837	15712	16773
Townsville	15455	17103	17609	18094	18874	19752
Cairns	17266	17007	17429	18060	18677	19245
Totals	167567	177464	185951	195581	204872	213960