



2017/18 LIFE SAVING VICTORIA
**DROWNING
REPORT**



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107

TOTAL DROWNING INCIDENTS (FATAL AND NON-FATAL).



This year 40 people drowned in Victoria. That means that 40 families have had to experience the unbearable grief of losing someone they love, to a fate that should have been preventable.

Preventing more families from having to experience this life-long heartache is what motivates us to continue our vital drowning prevention work. Monitoring and analysis of the trends plays an important role in providing the evidence-base for the directions of our drowning prevention efforts.

Our work continues with the results for the 2017/18 financial year, which reveal a number of concerning trends, including:

- A total of 107 drowning incidents in Victoria (including 40 fatal and 67 non-fatal).
- The highest summer drowning toll in Victoria in 20 years, with 23 reported drowning deaths from 1 December 2017 to 28 February 2018.
- A 28% increase in coastal drowning compared to the ten-year average (2007/08 to 2016/17).
- Alcohol is a persistent factor in drowning statistics, with nine drowning deaths in which alcohol and/or illicit drugs were reportedly consumed by the individual prior to drowning. This represents 23% of the total number of drowning incidents in 2017/18.
- 35% of drowning deaths were people from CALD (Culturally and Linguistically Diverse) communities.
- Males are still overrepresented in drowning statistics, being three times more likely to drown than females.
- Increases were observed in the drowning rate per head of population for those aged 45-64 (35%) and 25-44 (15%).

Among these trends, there is some good news, including a 46% decrease in the fatal drowning rate in Victoria since the start of the Play it Safe by the Water (PISBTW) campaign in 1998. The campaign, in its 20th year, continues to engage the community, aquatic industry and government in drowning prevention. This year the campaign targeted supervision of children aged 0-4 years, safety of older adults, CALD communities and the increased frequency of coastal drowning.

Progress has also been made in public pool safety, with the development of the *Safer Public Pools - Code of Practice*, which supports public swimming pool owners and operators to provide the highest level of safety at their facilities. The code has been developed by LSV, in consultation with key stakeholders from government and the aquatic industry.

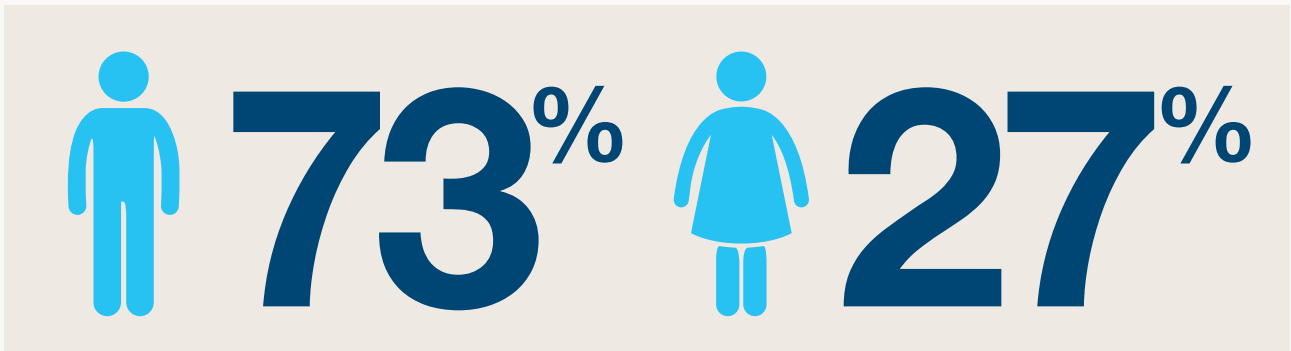
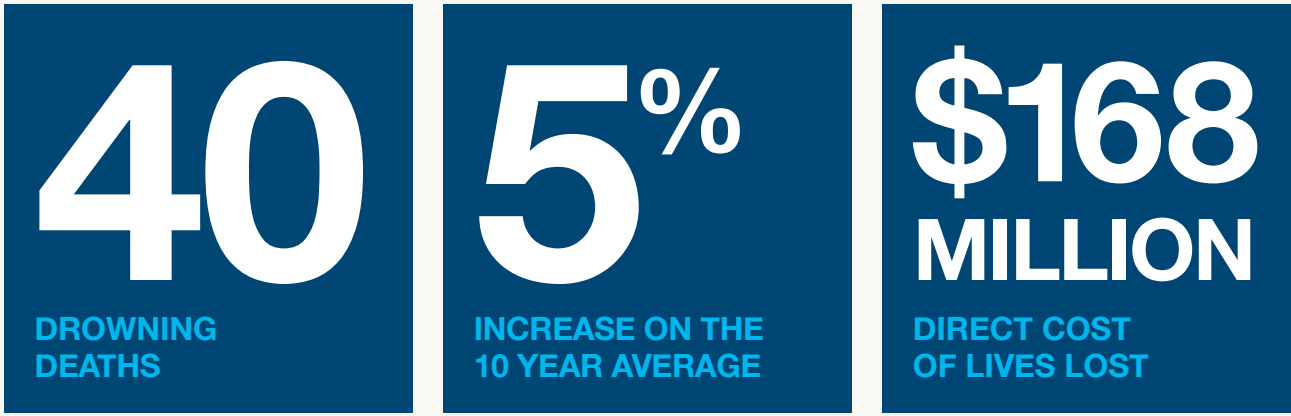
Another key achievement as the result of a coordinated industry approach to government is the recent passing of legislation to make the registration of swimming pools and spas mandatory in Victoria. This will be accompanied by a new compliance regime (including a mandatory register of pools and spas and regular pool and spa inspections) and will come into effect on 1 December 2019. This is a further positive step towards minimising the risk of young children drowning in home pools and spas.

I invite you to review this report as a summary of the current issues and as a focus point for conversations in working to address new and continuing risks. Please peruse this report knowing that every drowning death is one too many.

Dr Nigel Taylor ESM
CEO



Fatal Drowning in 2017/18



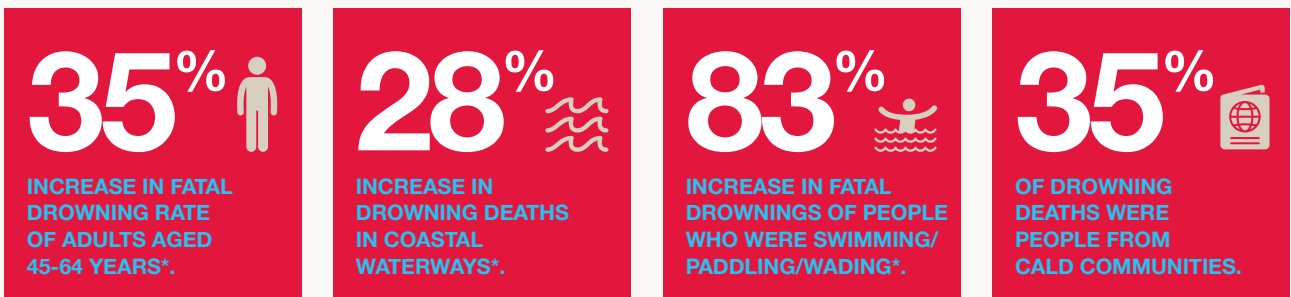
Location (fatal)



Activity (fatal)



Key Fatal Drowning Statistics in 2017/18



*Compared to the 10-year average (2007/08 to 2016/17)

Non-fatal Drowning in 2017/18

67

NON-FATAL DROWNING INCIDENTS ATTENDED BY PARAMEDICS

1.05

CRUDE NON-FATAL DROWNING RATE PER 100,000 PERSONS IN VICTORIA IN 2017/18



66%



34%

Location (non-fatal)

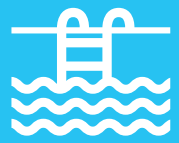
39%

BAY/
BEACH/
OCEAN



28%

POOLS
(15% RESIDENTIAL
POOLS;
13% PUBLIC
POOLS)



Activity (non-fatal)

54%



SWIMMING/PADDLING/WADING

10%



BATHING

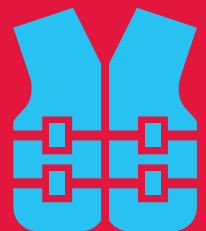
Key Fatal Drowning Statistics Over the Past Decade

88%



OF DROWNING DEATHS IN PUBLIC POOLS WERE MALE.

84%



OF PEOPLE THAT DROWNED IN BOATING INCIDENTS WERE NOT WEARING A LIFEJACKET, WORE AN INCORRECTLY FITTED LIFEJACKET OR ONE THAT WAS INCORRECT FOR THE CONDITIONS.

Every day, visitors to Victoria's 811 kilometres of ocean beaches, 259 kilometres of bay beaches, 85,000 kilometres of rivers, 13,000 natural wetlands and 450 public and commercial swimming pools, engage in a wide variety of recreational aquatic activities (Short, 1996; DSE, 2011; VAIC, 2001). Our prevention efforts span this setting.

Reduce Drowning

Reduce the Victorian drowning rate



Drowning deaths in Victoria in 2017/18. This is two more than the 10-year average 2007/08 to 2016/17.



Crude fatal drowning rate per 100,000 persons in Victoria in 2017/18; a 6% decrease compared to the 10-year average (2007/08 to 2016/17).



Non-fatal drowning incidents attended by paramedics in Victoria in 2017/18. A crude non-fatal drowning rate of 1.05 per 100,000 persons in Victoria in 2017/18.



Decrease in the fatal drowning rate in Victoria since the start of the Play it Safe by the Water (PISBTW) campaign in 1998 (baseline is the three-year average 1996/7 to 1998/9 compared to the follow-up 2015/16 to 2017/18 average).



Direct cost to society of lives lost (where the value of a statistical life is estimated at \$4.2 million; Office of Best Practice Regulation, 2014).

Services

Expand to meet public need/ sustainability/ membership development, growth and support



Rescues by lifesavers and lifeguards on patrolled beaches on average per year from 2007/08 to 2016/17.



Rescues per 100,000 beachgoers on average per year from 2007/08 to 2016/17.



First aid assistance by lifesavers and lifeguards on patrolled beaches on average per year from 2007/08 to 2016/17.



Volunteer members, patrolling our beaches and providing education and training in lifesaving activities, to ensure the safety of Victoria's waterway users.



Total value of coastal services in Victoria estimated at per year (PWC, 2011).

PROGRESS

The following table outlines Victoria's progress against the Victorian Water Safety Strategy 2016-2020 and Australian Water Safety Strategy 2016-2020 with respect to fatal drowning incidents.

Whilst the overall drowning rate has decreased by 17% from baseline, this is well short of the target of a 50% reduction in drowning by 2020.

KEY LIFE STAGES	BASELINE	FOLLOW-UP	PROGRESS
	3 YEAR AVERAGE (2004/05-2006/07)	3 YEAR AVERAGE (2015/16-2017/18)	
Reduce drowning in children aged 0-4 years	3	3	High concern
Reduce drowning in children aged 5-14 years	4	1	On track
Reduce drowning in young people aged 15-24 years	5	4	Some concern
Reduce drowning in people aged 65+	8	10	High concern

Education & Training

Continue development to ensure efficiency and expansion of delivery

183,207 

Participants took part in water safety education state-wide in 2017/18; a 3.9% reduction compared to the five-year average (2012/13 to 2016/17).

16,500 

Culturally and linguistically diverse participants took part in LSV programs in 2017/18; a 32% increase compared to the five-year average (2012/13 to 2016/17).

18,265 

People trained in CPR or other First Aid related courses in 2017/18.

9,190 

Participants in Pool Lifeguard, Community Surf Life Saving, or water rescue courses in 2017/18.

167 

Aquatic facilities are registered Watch Around Water facilities in 2017/18. This represents an estimated 56% of aquatic facilities in Victoria.

HIGH RISK LOCATIONS	BASELINE 3 YEAR AVERAGE (2004/05-2006/07)	FOLLOW-UP 3 YEAR AVERAGE (2015/16-2017/18)	PROGRESS
Reduce drowning in inland waterways	16	15	Some concern
Reduce drowning in coastal waters	14	19	High concern
Reduce drowning by strengthening the aquatic industry*	0	0	On track

* Includes drowning deaths at public swimming pools.

**Includes boats and watercraft, rock fishing, other fishing and diving.

Aquatic Risk & Research

Striving for excellence/ evidence based practice

15,104 

Individuals observed on the Yarra (Vic) and Swan (WA) rivers as part of the Inland Waterways Drowning Prevention Project. Characteristics such as exposure, land and water usage and drowning risk factors (e.g. supervision, alcohol and lifejackets) were recorded (Strugnell et al, 2017).

92% 

Of participants in the Open Water Grey Medallion program described increased confidence in participating in aquatic activities and applying water safety knowledge after completing the program (Birch et al, 2017).

10,186 

Children and 6,930 parents and carers observed as part of a pilot study of a public education program designed to improve parental supervision of children at public swimming pools. Parental supervision of children aged 6-10 years improved significantly following the program (Matthews & Franklin, 2018).

267 

Assessments conducted by LSV. Pool Safety Assessments of 119 aquatic centres measured performance against best practice standards, and 148 beach risk assessments were conducted within coastal drowning blackspot areas.

45% 

Of council-owned aquatic facilities have not completed a facility safety assessment in the past three years.

KEY DROWNING CHALLENGES	BASELINE 3 YEAR AVERAGE (2004/05-2006/07)	FOLLOW-UP 3 YEAR AVERAGE (2015/16-2017/18)	PROGRESS
Reduce alcohol and drug related drowning	11	11	Some concern
Reduce boating, watercraft and recreational activity related drowning**	9	12	High concern
Reduce drowning in high-risk populations***	7	9	High concern

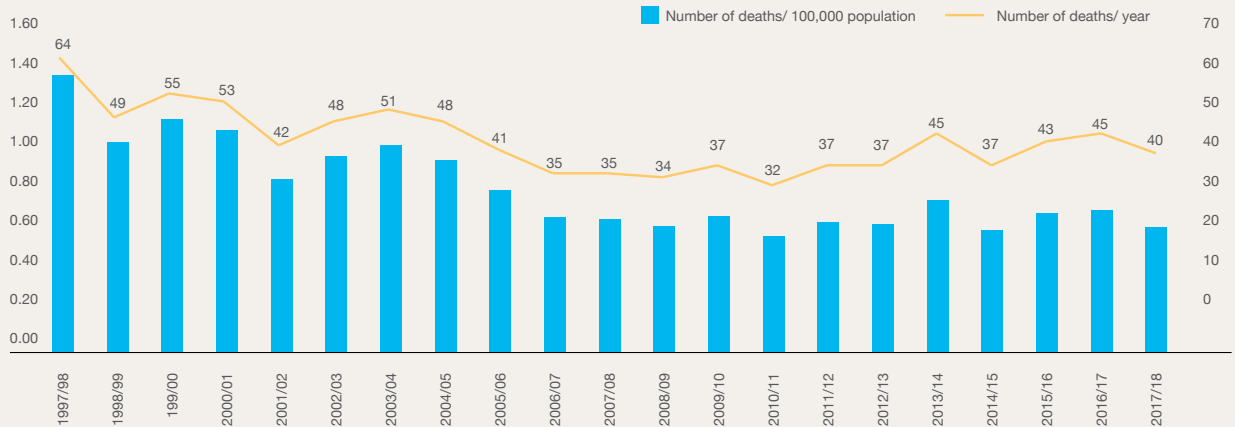
*** Includes Aboriginal and Torres Strait Islanders, people from culturally and linguistically diverse (CALD) backgrounds, international tourists and international students.

20

YEARS OF
PLAY IT SAFE
BY THE WATER.



DROWNING DEATHS AND DROWNING RATE
SINCE PISBTW CAMPAIGN START IN 1998



46%

**DECREASE
IN THE FATAL
DROWNING
RATE IN VICTORIA
SINCE THE
START OF THE
PLAY IT SAFE
BY THE WATER
CAMPAIGN
IN 1998.**

Play it Safe by the Water (PISBTW) is a state-wide initiative that aims to promote safe participation in aquatics throughout the community in Victoria, Australia. From the beach to inland waterways, the pool and in the home, this major water safety initiative combines public awareness campaigns, targeted education programs, lifesaving service development, policy and advocacy. The PISBTW network comprises various water safety and aquatic sporting organisations, industry, government and the community.

A study of the effectiveness of PISBTW (Matthews et al, 2018) revealed that since the inception of PISBTW the unintentional drowning rate in Victoria decreased by 46% (from 1.27/100,000 at the baseline 3 year average 1996/97 to 1998/99 to 0.68/100,000 at follow-up 3 year average 2015/16 to 2017/18).

77%

RECALL OF ADVERTISING

Shifts in the drowning rate particularly in young children were identified. Survey results indicated a recall of advertising by up to 77% of respondents. Throughout the study period awareness differed across demographic

segments; age and geographical variation, and to a lesser extent gender differences were found. In addition, policy and legislative changes were made.

35%

INCREASE IN THE DROWNING RATE OF ADULTS AGED 45-64 YEARS.

There were a total of 107 drowning incidents in Victoria in 2017/18, comprising 40 drowning deaths and 67 non-fatal incidents attended by paramedics. Children aged 0-4 years have the greatest overall risk of drowning with the highest age-specific combined rate of fatal and non-fatal drowning. However, people aged 45-64 had the highest age-specific fatal drowning rate in 2017/18.

DEATHS

The 40 drowning deaths in 2017/18 represents a 4.7% increase (two deaths) compared to the 10-year average from 2007/08 to 2016/17. The crude fatal drowning rate was 0.63 per 100,000 persons in 2017/18, which is a 6% decrease compared to the 10-year average (0.66 per 100,000 persons from 2007/08 to 2016/17).

Of the 40 drowning deaths in Victoria in 2017/18, 29 (73%) were male. Males are consistently overrepresented in drowning statistics. Overall, they are three times more likely to drown than females.

Fourteen adults aged 45-64 years died as a result of drowning in 2017/18, with a drowning rate of 0.92 per 100,000 population. This is a 35% increase compared with the 10-year average (2007/08 to 2016/17). There was also a 15% increase in the drowning rate of adults aged 25-44 years. There was a decrease in the fatal drowning rate of children aged 0-4 years, 5-14 years and older adults aged 65+ years.

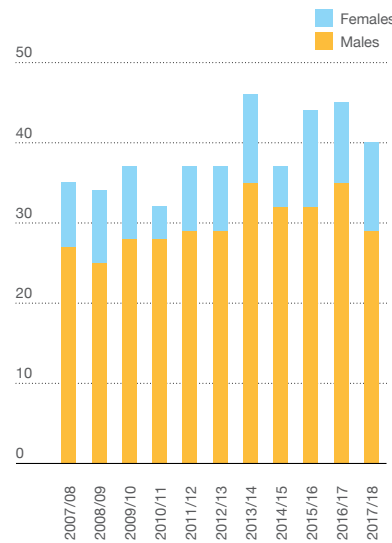
NON-FATAL INCIDENTS

There were 67 non-fatal drowning incidents attended by paramedics in 2017/18. This represents a crude non-fatal drowning rate of 1.05 per 100,000 persons in 2017/18.

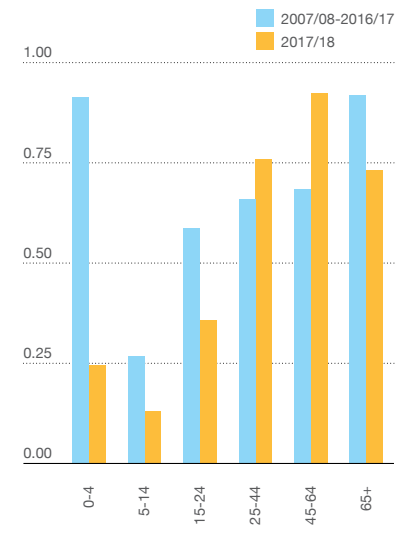
Admissions, 2007/08 to 2016/17

Over the previous decade there were 926 hospital admissions, an average of 93 hospital admissions for non-fatal drowning per year. The annual crude hospital admissions rate was 1.61 per 100,000 persons per year (2007/08 to 2016/17). The rate of admissions remained largely similar over the 10-year period from 2007/08 to 2016/17.

FREQUENCY OF FATAL DROWNING IN VICTORIA BY SEX, 2007/08 TO 2017/18



FATAL DROWNING RATE PER 100,000 PERSONS IN VICTORIA BY AGE 2007/08 to 2017/18



A total of 666 males were admitted to hospital for non-fatal drowning, an average of 67 (72%) hospital admissions per year. Overall, the rates of admission decreased with increasing age.

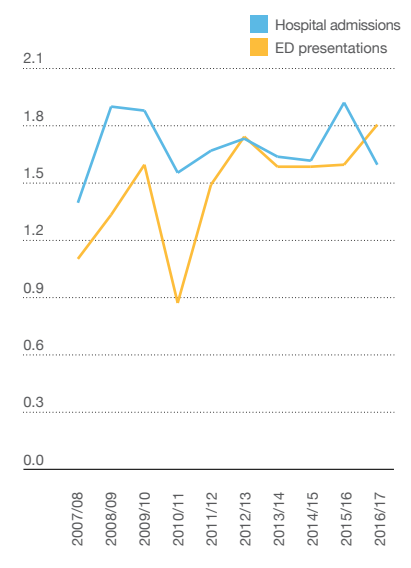
Children aged 0-4 years had the highest rates of admission, with 5.94 per 100,000 population annually followed by those aged 15-24 years (1.93 per 100,000 population) and those in the 5-14 years age group (1.67 per 100,000 population). Those aged 65 years and above presented the lowest rate of admission at 0.96 per 100,000 population.

Emergency Department (ED) Presentations, 2007/08 to 2016/17

There were 811 ED presentations in the 10-year period from 2007/08 to 2016/17, an average of 81 ED presentations for non-fatal drowning annually. The average annual rate of ED presentations was 1.40 per 100,000 persons per year. Children aged 0-4 years had by far the highest rate of ED presentations, with 9.63 per 100,000 population annually. This was followed by those aged 5-14 years (1.83 per 100,000 population) and those in the 15-24 years age group (1.21 per 100,000 population).

The majority of the 811 ED presentations were males (528, 65%). Similar to hospital

HOSPITAL ADMISSIONS AND EMERGENCY DEPARTMENT (ED) PRESENTATIONS RATE PER 100,000 PERSONS IN VICTORIA, 2007/08 TO 2016/17



admissions, ED presentations decreased with increasing age.

35%

OF DROWNING DEATHS IN 2017/18 WERE OF PEOPLE FROM CALD COMMUNITIES.

CULTURAL AND LINGUISTIC DIVERSITY

This year 14 (35%) individuals that drowned were reported as being from culturally and linguistically diverse (CALD) communities. This is a 73% increase when compared to the 10-year average (8 per year from 2007/08 to 2016/17).

Of those individuals where country of birth was recorded 27 drowning victims (20%) also had the number of years they had been living in Australia reported. Of those 27 individuals the median length of time living in Australia was six years.

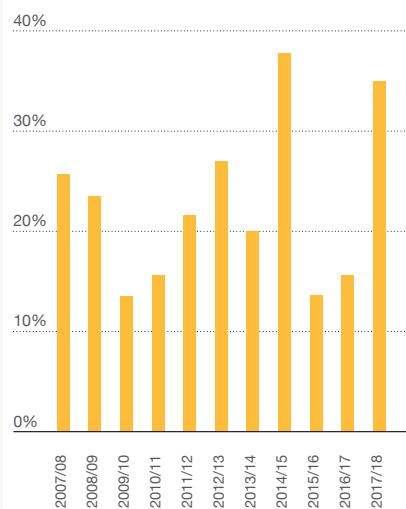
In the past decade 21% of drowning deaths were of individuals known to have been from CALD communities. Of those, the majority were males (84%), and aged 25-44 years (46%) followed by 15-24 years (25%). Incidents typically occurred in open waterways; with 44% at beaches and 20% in rivers/creeks/streams. The most common activity prior to the drowning incident was swimming/wading (45%), including attempting a rescue of a family member or friend. The other common activity was fishing (18%), which included rock fishing, fishing from a boat or diving for abalone. Another common activity was walking/recreating near water (14%).

A recent study of overseas born drowning deaths in Australia (Pidgeon, Barnsley & Mahony, 2018), found that in the 10-year period from 2005/06 to 2014/15, 762 people drowned in Australia who were born in another country. This represented 27% of total drowning deaths during this period and a crude rate of 1.15 per 100,000 overseas born population.

Key findings of the national report included:

- 86% of people who drowned were living in Australia at the time of death.
- 81% of cases were male, though more females drowned from the age of 45 years.
- Where circumstances of residency were known, 29% had been residents for ten years or more, 23% were overseas tourists and 19% had been residents for five years or less.
- The populations found to be at highest risk of drowning (crude drowning rate per 100,000 population in Australia) were from Taiwan, South Korea and Ireland.
- Drowning deaths most commonly occurred in New South Wales (37%), followed by Queensland (28%) and Western Australia (18%). They most frequently occurred within a major city (46%).
- Key risk factors included having a pre-existing medical condition (38%), alcohol (25%), and drugs (medical and illegal substances – 25%) and being a weak or non-swimmer.

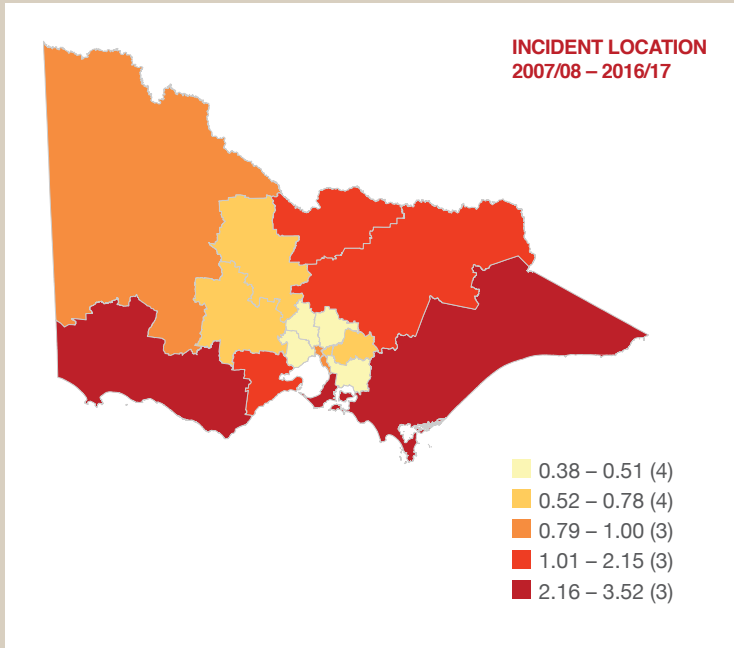
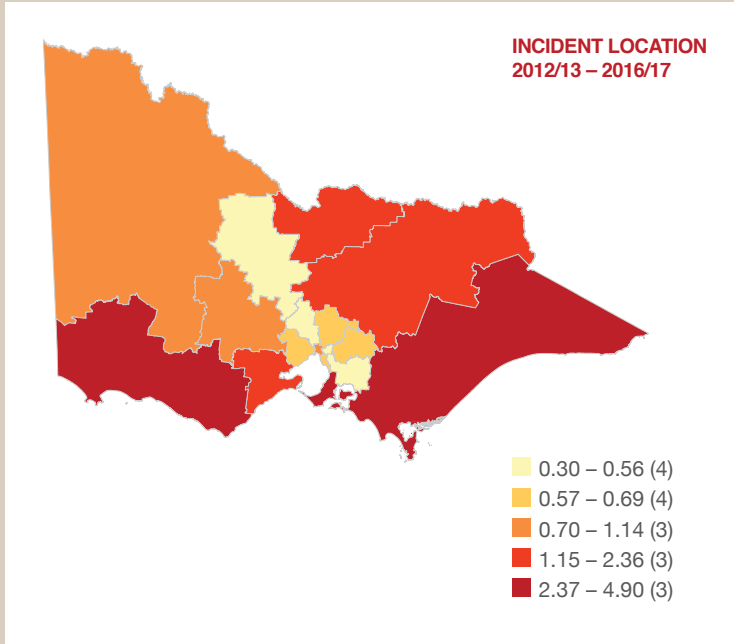
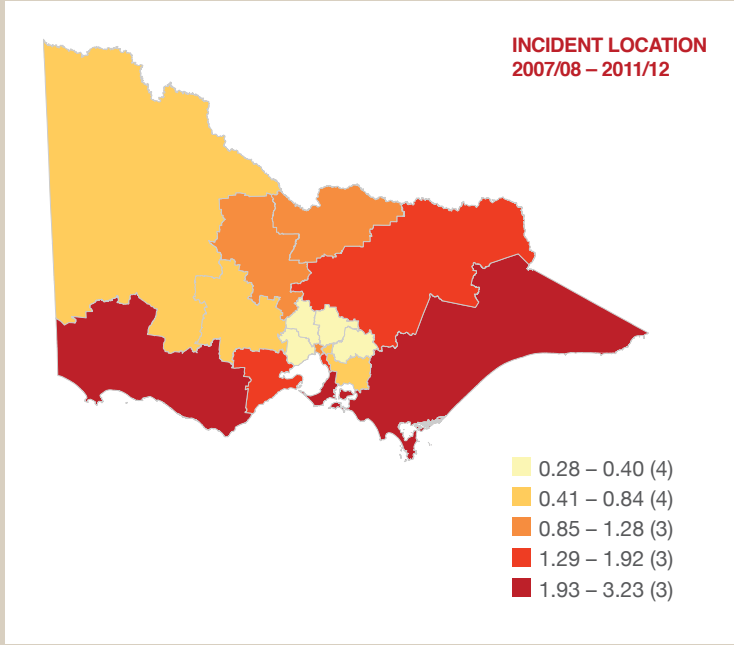
PERCENTAGE OF FATAL DROWNING BY OVERSEAS COUNTRY OF BIRTH* 2007/08 – 2017/18



*Country of birth was known in 36% of fatal drowning cases.

Individuals from a CALD background are recognised as those who identify as 'having a specific cultural or linguistic affiliation by virtue of their place of birth, ancestry, ethnic origin, religion, preferred language, language(s) spoken at home, or because of their parents' identification on a similar basis' (Department of Human Services Multicultural Strategy Unit, 2002).

RELATIVE RISK OF DROWNING BY INCIDENT LOCATION (SA4)

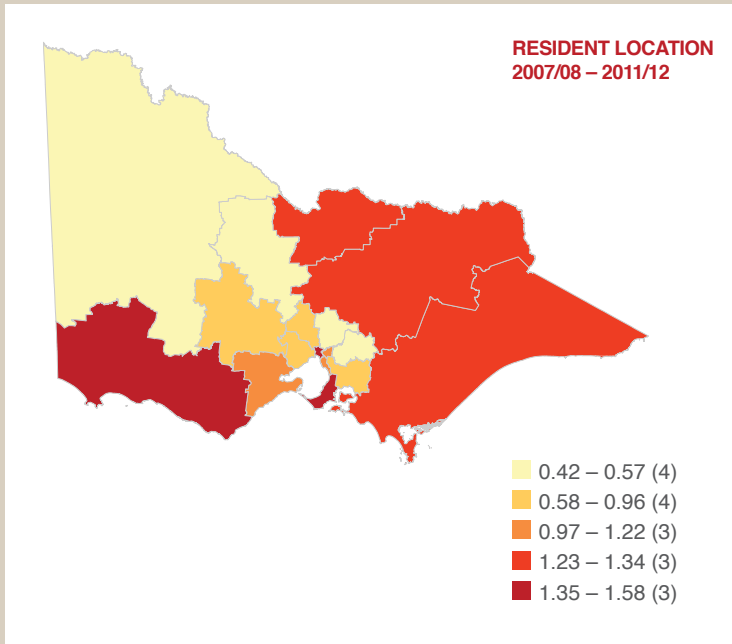


Drowning by incident location from 2007/08 to 2016/17

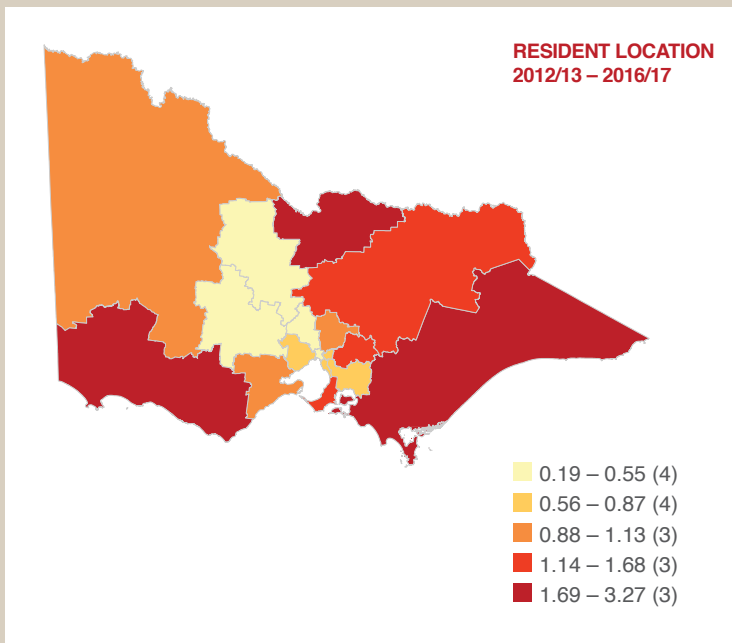
These maps outline the relative risk of drowning based on incident location within each of the 17 Victorian SA4 areas from 2007/08 to 2016/17. Values greater than 1 are considered excess drowning risk – these values indicate that a SA4 incident to population ratio is greater than the drowning incident to population ratio for the whole of Victoria. Conversely, values less than 1 indicate that the observed SA4 incident to population ratio is less than the overall state ratio.

The relative risk maps are provided as a three-part map series. The first two maps illustrate incident ratios based on two comparative five-year timeframes: 2007/08 to 2011/2012 and 2012/13 to 2016/17. The third map combines the incident data for these two timeframes providing a ten-year (2007/2008 to 2016/17) comparative summary.

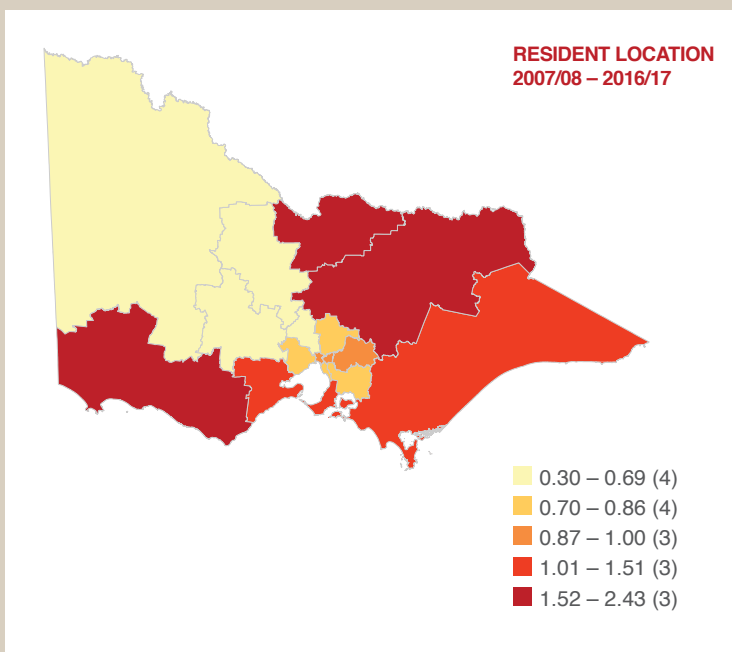
Drowning by place of residence from 2007/08 to 2016/17



These relative risk maps are similar to the incident location maps except they are based on the person's place of residence. They outline the relative risk of drowning within each of the 17 Victorian SA4 areas from 2007/08 to 2016/17 based on residence. Values greater than 1 are considered excess risk – these values indicate that a SA4 resident location to population ratio is greater than the drowning resident to population ratio for the whole of Victoria. Conversely, values less than 1 indicate that the observed SA4 resident to population ratio is less than the overall state ratio.



The relative risk maps are provided as a three-part map series. The first two maps illustrate resident ratios based on two comparative five-year timeframes: 2007/08 to 2011/2012 and 2012/13 to 2016/17. The third map combines the resident data for these two timeframes providing a ten-year (2007/2008 to 2016/17) comparative summary.



WHEN DID THEY DROWN?

Month and Season

Over half (58%, 23) of drowning deaths occurred in the summer months in 2017/18. This is a 64% increase compared to the five-year average (2012/13 to 2016/17) and is the highest crude number recorded in over twenty years, since 1997/98. Spring represented the second largest number of drowning deaths, with 22% (8). Aside from summer, there was a decrease in drowning deaths in all seasons.

In the previous decade (2007/08 to 2016/17) the majority of drowning deaths occurred in summer (34%), followed by spring (24%), autumn (22%), and winter (20%). There were significant increases in drowning deaths in January and December in 2017/18 when compared with the ten-year average from 2007/08 to 2016/17. In fact, one-third (33%, 13) of drowning deaths occurred in January.

Similar to fatal drowning, non-fatal drowning incidents were far more common in summer (64%, 43). This was followed by spring and autumn (13%, 9), and winter (9%, 6).

WHERE DID THEY DROWN?

Region

In the last financial year, 53% (21) of drowning incidents occurred in major cities in Victoria, this is a 10.5% increase when compared with the ten-year average from 2007/08 to 2016/17.

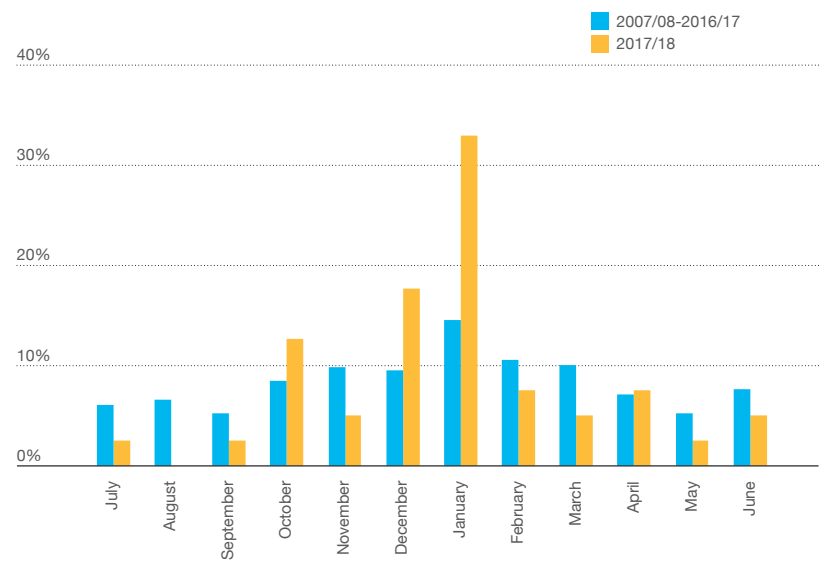
When accounting for the differences in the distribution of the population, the drowning rate decreased for those residing in both metropolitan Melbourne and regional areas in Victoria. There was a 37% decrease in the drowning rate of those residing in regional areas of Victoria this year (0.57 per 100,000 population in 2017/18) compared with the ten-year average (0.90 per 100,000 population from 2007/08 to 2016/17). Unlike in 2016/17, where those residing in regional areas were almost twice as likely to drown compared to those in metropolitan Melbourne, in 2017/18 the fatal drowning rates were very similar (0.53 per 100,000 population in metropolitan Melbourne).

Waterways

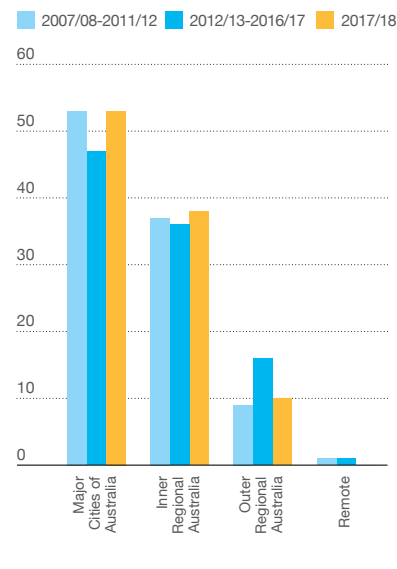
In 2017/18 half of all drowning deaths occurred in bay/beach/ocean environments (50%, 20). This represents a 28% increase in drowning deaths in coastal waterways compared with the average over the previous decade (16 from 2007/08 to 2016/17). The 15 drowning deaths occurring in inland waterways (rivers/creeks/streams and lakes/dams) is a 10% increase on the 10-year average from 2007/08 to 2016/17.

Over one-third of non-fatal drowning incidents in 2017/18 occurred in bay/beach/ocean environments, (39%, 26). Three other common waterways for non-fatal incidents were private/home pools (15%), public swimming pools (13%) and rivers/creeks/streams (13%).

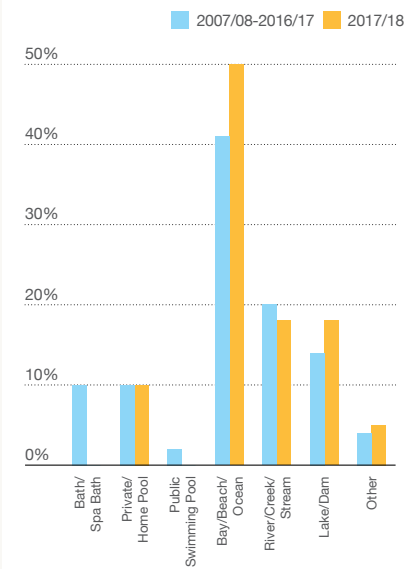
PERCENTAGE OF FATAL DROWNING BY MONTH
2007/08–2017/18



PERCENTAGE OF FATAL DROWNING BY REMOTENESS AREA OF INCIDENT IN VICTORIA, 2007/08–2017/18



FREQUENCY OF FATAL DROWNING PER YEAR BY BODY OF WATER
2007/08–2017/18



28%

INCREASE IN DROWNING DEATHS IN COASTAL WATERWAYS.

83%

INCREASE
IN THOSE
SWIMMING
OR WADING
IN WATER
PRIOR TO THE
DROWNING
INCIDENT.



WHAT WERE THEY DOING?

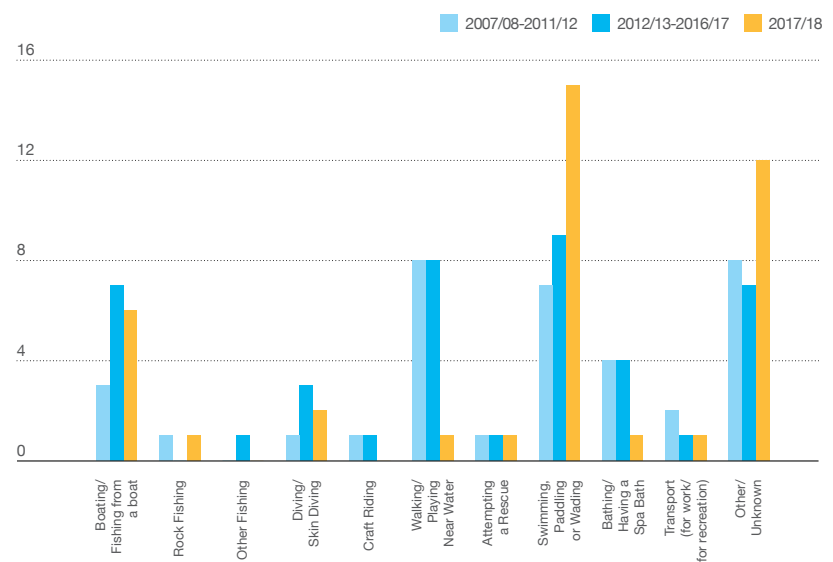
Activity

The most common activity immediately prior to a fatal drowning in 2017/18 was swimming/paddling/wading (38%, 15), followed by boating/fishing from a boat (15%, 6).

There was an 83% increase in those that fatally drowned whilst swimming/paddling/wading in 2017/18 compared to the 10-year average from 2007/08 to 2016/17 (8, 21%). Similar to fatal drowning, the greatest proportion of non-fatal drowning incidents involved those swimming/paddling/wading (54%, 36). These figures again highlight the importance of the Victorian government initiative making swimming and water safety mandatory in the primary school curriculum.

Unintentional water entry (slips/trips/falls) accounted for 23% (9) of fatal drowning incidents last year. This is a 29% decrease compared to the past decade with an average of 13 (33%) per year from 2007/08 to 2016/17.

FREQUENCY OF FATAL DROWNING PER YEAR
BY ACTIVITY 2007/08–2017/18



85%

OF THE DROWNING DEATHS IN PUBLIC SWIMMING POOLS OVER THE LAST 20 YEARS WERE MALE WITH A MEDIAN AGE OF 29 YEARS.

DROWNING DEATHS AT PUBLIC SWIMMING POOLS

There were 20 drowning deaths at public swimming pools in Victoria in the past 20 years or an average of 1 death per year. Drowning deaths in public swimming pools represented 2% of the total unintentional drowning deaths in Victoria over the last 20 years. In addition, there were on average 19 non-fatal drowning incidents in public swimming pools attended by paramedics in the five-year period from 2013/14 to 2016/17.

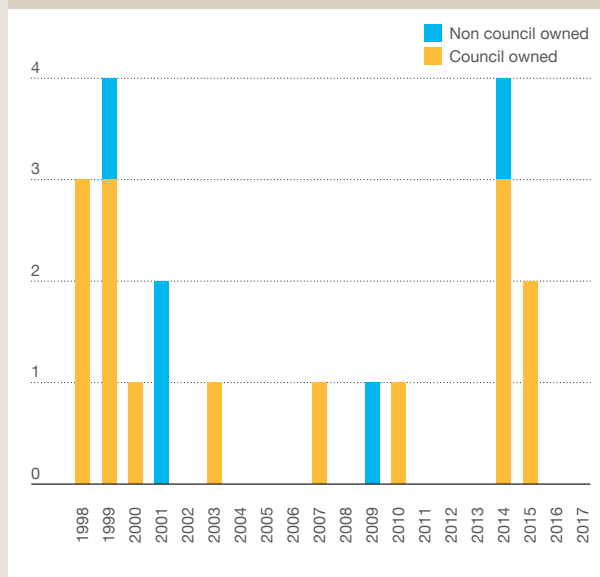
Of the 20 drowning deaths in public swimming pools, 75% (15) occurred at a council-owned aquatic and leisure facility, the other 25% (5) occurred at non-council owned pools (typically privately-owned health and fitness centres, or hotels/resorts).

The majority (85%, 17) of the deceased were male and the median age was 29 years. Just over a third of cases occurred in the two-year period from 1998-1999 (35%, 7) and 2014-2015 (35%, 7).

Key factors that contributed to drowning deaths at public swimming pools were a lack of supervision and pre-existing medical conditions.

A recent report (Mahony et al, 2018) highlighted that between 2005/06 and 2014/15, there were 36 fatal and 257 non-fatal drowning incidents in public and commercial swimming pools in Australia. Victoria had the third-highest number of drowning deaths (7, 19%), after Queensland (11, 31%) and New South Wales (9, 25%). Nationally, males accounted for 81% of deaths and 58% of non-fatal incidents. People born overseas accounted for 28% of deaths. The leading age group for drowning was children aged 5-9 years (19%), followed by adults aged 45-54 years (17%). The absence of parental or carer supervision was noted in 78% of fatalities for children aged 0-14 years.

FREQUENCY OF FATAL DROWNING IN PUBLIC SWIMMING POOLS, 1998 TO 2017



The majority (94%) of those who drowned were not visitors to the location where the incident took place. National risk factors for drowning included pre-existing medical conditions (61%), alcohol consumption (8%) and drug use (39%), namely prescription medication.

84%

OF PEOPLE THAT DROWNED IN BOATING INCIDENTS WERE NOT WEARING A LIFEJACKET, WORE AN INCORRECTLY FITTED LIFEJACKET OR ONE THAT WAS INCORRECT FOR THE CONDITIONS.



ALCOHOL AND DRUGS

There were 9 drowning deaths in 2017/18 in which alcohol and/or illegal drugs were reportedly consumed by the individual prior to drowning, representing 23% of the total number of drowning incidents. This compares to 11 drowning deaths on average per year over the past decade (2007/08 to 2016/17), representing 27% of the total drowning deaths.

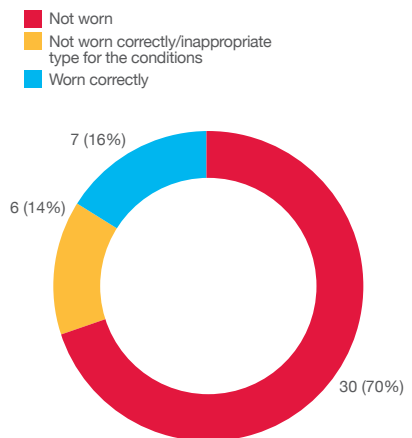
The consumption of alcohol and/or illegal drugs prior to recreating in, on or around water increases the risk of drowning because they can impair judgement, reduce coordination, slow reaction times, heighten the chance of hypothermia and promote risk taking behaviour. Prescription medications can also increase the risk of drowning as they can increase the risk of falls.

LACK OF LIFEJACKET USE

The lack of a lifejacket has potentially claimed many lives in Victoria. Of the 52 boating related drowning deaths over the past decade (2007/08 to 2016/17), lifejacket usage was known in 43 cases. Of these 43, in 30 (70%) incidents the deceased was not wearing a lifejacket at the time. A further 6 (14%) had an incorrectly fitted lifejacket or wore the incorrect type recommended for the conditions.

Wearing a lifejacket when rock fishing could also have saved another 6 lives over the past decade (2007/08 to 2016/17) with all those individuals that drowned while rock fishing not wearing a lifejacket.

LIFEJACKET WEAR WHEN BOATING
2007/08–2016/17



23%

OF LIVES LOST IN 2017/18 INVOLVED ALCOHOL OR ILLEGAL DRUG USE PRIOR TO DROWNING.

The role of the coroner in Victoria is to investigate reportable deaths, which include drowning, in order to determine the identity of the person who died, the cause of the death and, in some situations, the circumstances surrounding the death. As part of this process the coroner may recommend ways to help prevent similar deaths in the future.

There were four coronial findings in 2017/18 where recommendations/ comments were made relating to drowning deaths. The following is a summary of the incidents and the recommendations/ comments made by the coroner as contained in the coronial findings. Note, they are not exact replications from the findings; these should be accessed from the Coroners Court of Victoria website:

<http://www.coronerscourt.vic.gov.au/home/coroners+written+findings/>



2014

Ze Cheng (Tony) Guan, aged 54 years, died as a result of drowning at a public swimming pool in Ascot Vale, he had motor neurone disease. Mr Guan was seen floating face-down in the hydrotherapy (warm water) pool. Emergency treatment was performed by lifeguards until emergency services arrived. He was then taken by ambulance to hospital. A test for brain function yielded a negative result and he was removed from life support.

Recommendations

1. That ... the YMCA review its training and procedures to ensure that the duties of life savers are clear when conducting supervisory and non-supervisory tasks.
2. That the YMCA review its Pool Operations Manual (if that manual in some form is still being used) to clarify the role and duties of lifeguards.
3. That the YMCA review its training and procedures and continue to engage with Life Saving Victoria current guidelines and recommendations to ensure both that staff are trained sufficiently in the need to identify and adequately supervise pool patrons in need of closer supervision, and that staff are in practice doing this.
4. That the YMCA review its procedures to ensure that safety equipment for lifeguards, and in particular bum bags, is ready and available to life savers before a shift is commenced.

2016

James Lin was 27 years old when he died from drowning at Gunnamatta Beach on the Mornington Peninsula. Mr Lin lived in Box Hill and travelled to Gunnamatta Beach with friends for a swim. They parked at the First Carpark, approximately 200 metres from the Gunnamatta Surf Life Saving Club and the patrolled part of the beach. They were swimming approximately 300 metres away from the Club and patrolled part of the beach. They were dragged down the beach and off a sandbar. Mr Lin, described as the weakest swimmer of the three was unable to make his way back to shore. His friends alerted lifeguards who commenced a search and found Mr Lin unconscious in the water; they commenced CPR. Emergency services arrived and continued CPR, but Mr Lin could not be revived.

Recommendations

1. That Victoria Police liaise with Life Saving Victoria, local lifesaving clubs, and other stakeholders, for the purpose of establishing a Mornington Peninsula surf safety working group.
2. That the surf safety working group give specific consideration to the changes suggested by the President of the Gunnamatta Surf Life Saving Club.

2016

Mark Jordan-Hill, aged 46 years, drowned whilst out paddling his ocean ski, approximately 500 metres off Whites Beach, Torquay. He wore a lifejacket, used a leg rope attached to the ski (though this was not designed to be used on an ocean ski) and carried a mobile telephone and an emergency distress flare. The weather conditions were overcast with strong winds, offshore waves were 3-4 metres with large breaking waves across the area, which meant the paddlers would have been challenged in avoiding the breaking waves.

Recommendation

That the Department of Economic Development, Jobs, Transport and Resources consider reviewing current regulatory safety requirements for operators of human-powered recreational vessels by requiring operators to carry and/or fix Emergency Position Indicating Radio Beacons and/or Personal Locator Beacons (preferably those with GPS capability) onto their Personal Flotation Devices (with no limitations as to distance from the coast). This has the potential to significantly increase the timeliness of notifications to emergency services, and any subsequent search and rescue operation.

2017

Jeffrey Coote, aged 83 years, died as a result of drowning whilst out paddling his surf ski, he had ischaemic heart disease and was not wearing a lifejacket/ Personal Flotation Device (PFD). Despite his medical history, he was generally of good health and was very active for his age. He typically rode his surf ski within Port Phillip Bay, but did not wear a lifejacket.

Comments

1. This investigation highlights the importance of wearing a PFD when engaged in recreational activities on our waterway, whether boating or on human-powered vessels. Use of a PFD is particularly important during solo activities, or in remote locations, when self-rescue may be difficult and assistance not readily available.
2. Unfortunately, the failure to use PFDs has been a feature of a number of coronial investigations, including recent cases...where the additional safety benefits of the Personal Locator Beacon (PLB) or Emergency Position Indicating Radio Beacon (EPIRB) to timely notification of rescue services was identified in the event of a medical situation, distress or other emergency.

20

**VICTORIANS DROWNED
IN THE MURRAY RIVER
FROM 2007/08 TO
2017/18.**

MURRAY RIVER DROWNING 2007/08 TO 2017/18

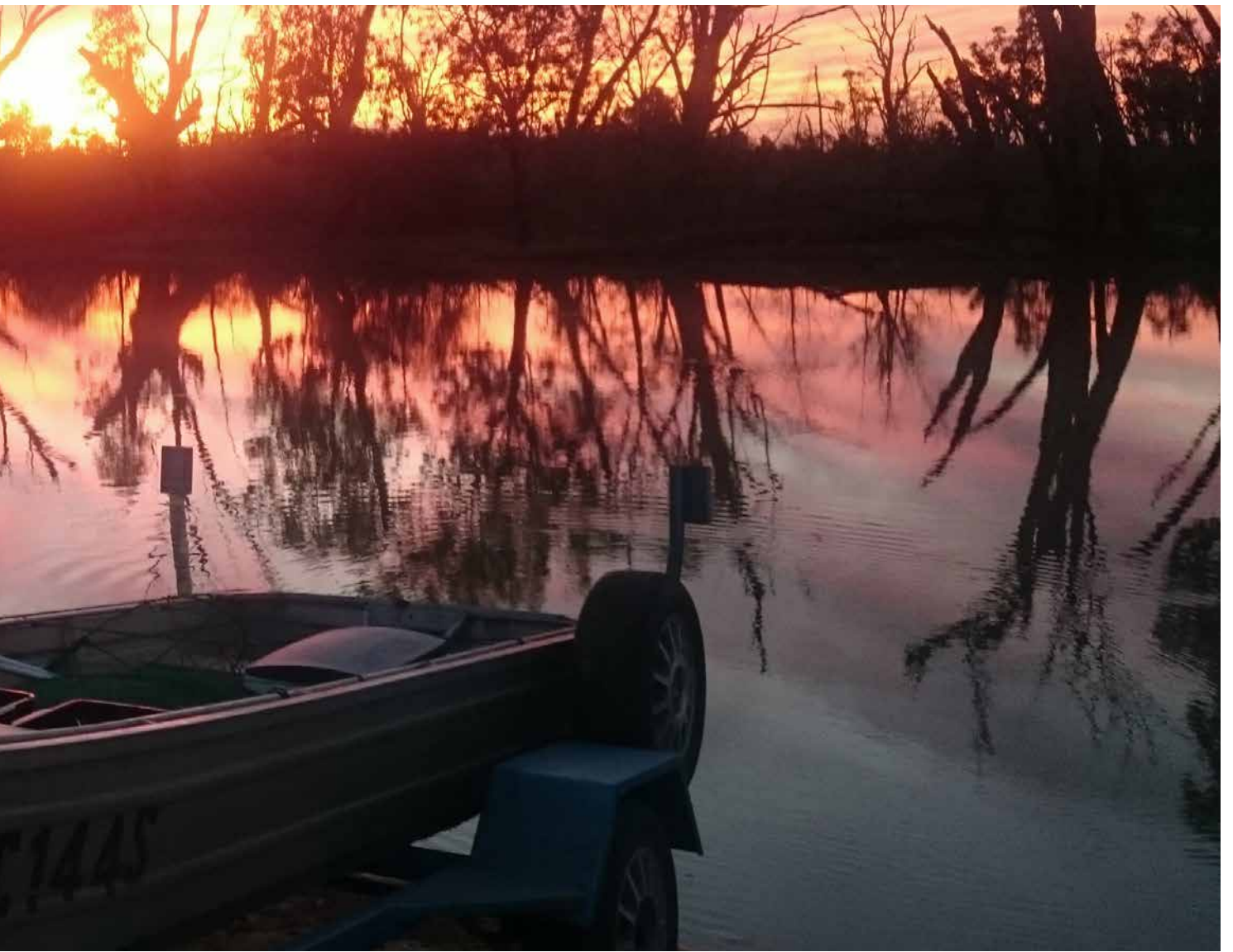
The Murray River has been identified as the number one river drowning blackspot in Australia (Peden & Queiroga, 2014). At 2,508 km, The Murray River is Australia's longest river. It forms a majority of the border length between Victoria and New South Wales and stretches down into South Australia. Due to state government legislation, drowning incidents that occur in the Murray River are under New South Wales jurisdiction and are therefore reported in New South Wales drowning statistics. However, many of the drowning victims resided in Victoria. Therefore the key trends of Victorians drowning in the Murray River are a focus for this report.

It is positive to note that no Victorians drowned in the Murray River in 2017/18. However, 20 Victorians drowned in the Murray River over the previous decade (2007/08 to 2016/17), an average of 2 per year. Of the 20, the majority, 16 (80%) were males, the average age of the deceased was 38 years, and 4 (20%) were reported as being from CALD communities.

The majority of incidents occurred on a weekday (13, 65%), and in summer (11, 55%). The most common activity just prior to drowning was swimming (8, 40%) Other activities included boating, kayaking, water-skiing, driving or recreating on a houseboat.

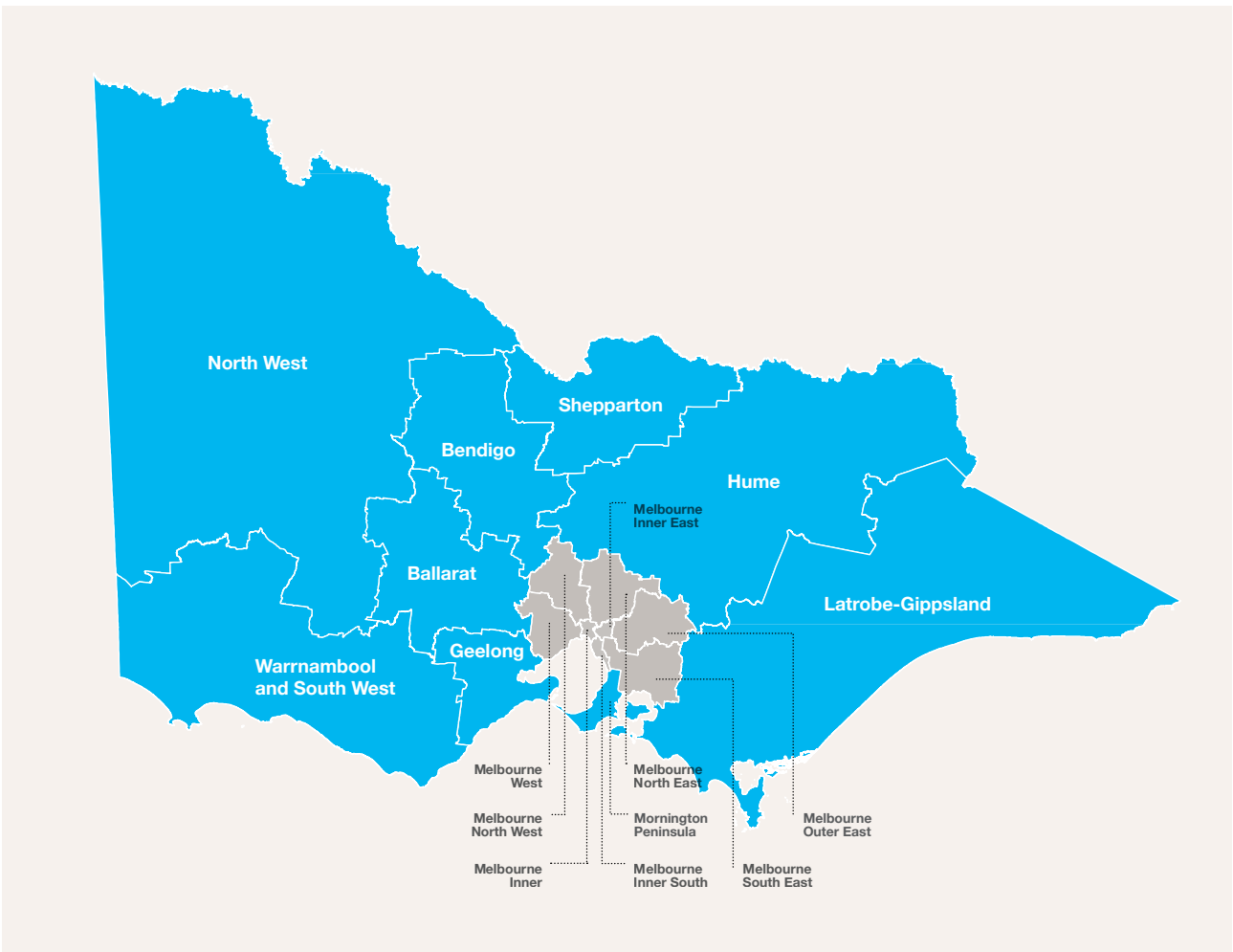
The mechanism of injury in over a third (7, 35%) of incidents was falling/jumping/stumbling into water. In 40% (8) of the drowning deaths the person had reportedly consumed alcohol prior to the incident.





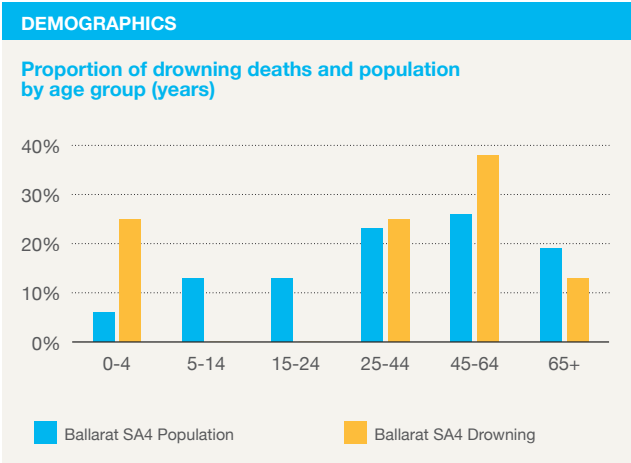
40%

**OF VICTORIANS
THAT DROWNED IN
THE MURRAY RIVER
HAD REPORTEDLY
CONSUMED ALCOHOL
PRIOR TO THE INCIDENT.**



Ballarat Statistical Area 4 – Drowning Statistics 2007/08–2016/17

8 Drowning Deaths	20 Ballarat SA4 residents hospitalised due to non-fatal drowning
6 Ballarat SA4 Residents Drowned in Victoria	20 Emergency Department presentations of Ballarat SA4 residents for non-fatal drowning
	55% Likelihood of one or more drowning deaths occurring in Ballarat SA4 in any given year
	45% Likelihood of one or more residents of Ballarat SA4 drowning in any given year



- LOCATION AND ACTIVITY**
- Lakes
 - Other inland (Dams, rivers/creeks/streams)
 - Bathtubs/spa baths
 - Bathing
 - Walking/recreating near water
 - Transport (for work/recreation)

Males were 1.7 times more likely to drown than females.

Bendigo Statistical Area 4 – Drowning Statistics 2007/08–2016/17

7

Drowning Deaths

30

Bendigo SA4 residents hospitalised due to non-fatal drowning

15

Emergency Department presentations of Bendigo SA4 residents for non-fatal drowning

3

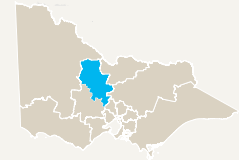
Bendigo SA4 Residents Drowned in Victoria

50%

Likelihood of one or more drowning deaths occurring in Bendigo SA4 in any given year

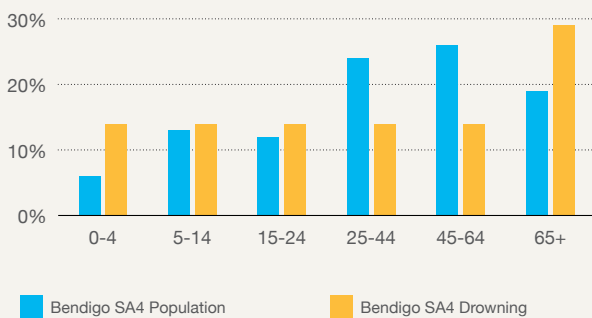
26%

Likelihood of one or more residents of Bendigo SA4 drowning in any given year



DEMOGRAPHICS

Proportion of drowning deaths and population by age group (years)



LOCATION AND ACTIVITY

- Dams
- Lakes, rivers/creeks/streams
- Home swimming pools
- Walking/recreating near water
- Boating/fishing
- Transport (for work/recreation)

Males were 7.0 times more likely to drown than females.

Geelong Statistical Area 4 – Drowning Statistics 2007/08–2016/17

29

Drowning Deaths

67

Geelong SA4 residents hospitalised due to non-fatal drowning

44

Emergency Department presentations of Geelong SA4 residents for non-fatal drowning

21

Geelong SA4 Residents Drowned in Victoria

94%

Likelihood of one or more drowning deaths occurring in Geelong SA4 in any given year

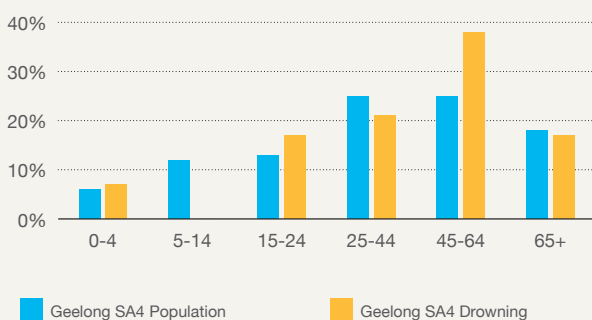
88%

Likelihood of one or more residents of Geelong SA4 drowning in any given year



DEMOGRAPHICS

Proportion of drowning deaths and population by age group (years)



LOCATION AND ACTIVITY

- Beaches
- Ocean
- Dams, rivers/creeks/streams
- Swimming/attempting a rescue
- Walking/recreating near water
- Diving (SCUBA/snorkelling)

Males were 2.2 times more likely to drown than females.

Hume Statistical Area 4 – Drowning Statistics 2007/08–2016/17

24 Drowning Deaths

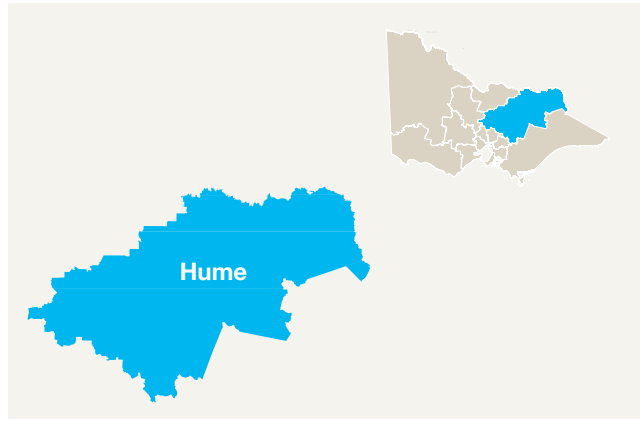
22 Hume SA4 residents hospitalised due to non-fatal drowning

23 Emergency Department presentations of Hume SA4 residents for non-fatal drowning

17 Hume SA4 Residents Drowned in Victoria

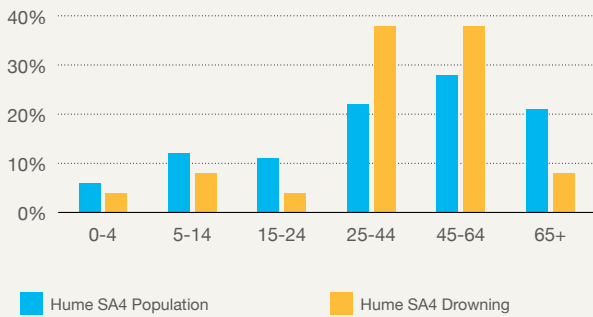
91% Likelihood of one or more drowning deaths occurring in Hume SA4 in any given year

82% Likelihood of one or more residents of Hume SA4 drowning in any given year



DEMOGRAPHICS

Proportion of drowning deaths and population by age group (years)



LOCATION AND ACTIVITY

- Rivers/creeks/streams
- Lakes/dams
- Home swimming pools
- Swimming/paddling/wading
- Boating
- Fishing

Males were 3.0 times more likely to drown than females.

Latrobe-Gippsland Statistical Area 4 – Drowning Statistics 2007/08–2016/17

58 Drowning Deaths

68 Latrobe-Gippsland SA4 residents hospitalised due to non-fatal drowning

53 Emergency Department presentations of Latrobe-Gippsland SA4 residents for non-fatal drowning

27 Latrobe-Gippsland SA4 Residents Drowned in Victoria

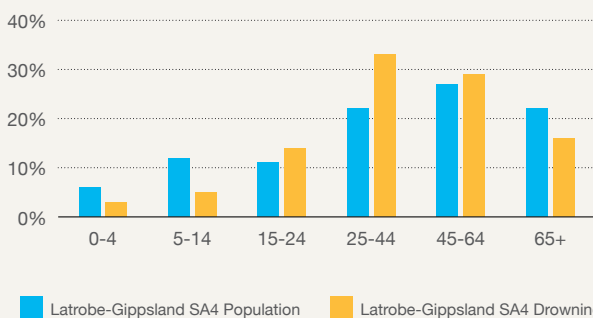
99% Likelihood of one or more drowning deaths occurring in Latrobe-Gippsland SA4 in any given year

93% Likelihood of one or more residents of Latrobe-Gippsland SA4 drowning in any given year



DEMOGRAPHICS

Proportion of drowning deaths and population by age group (years)



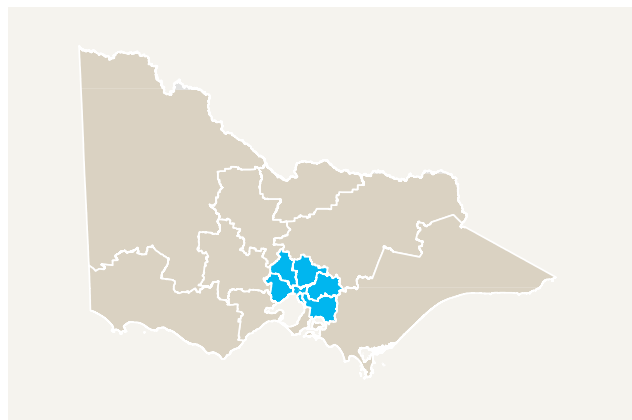
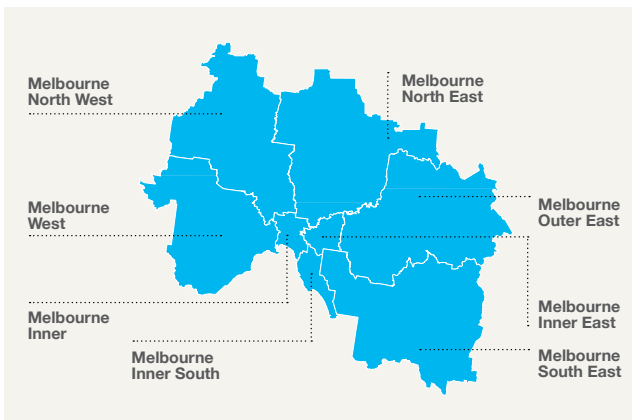
LOCATION AND ACTIVITY

- Beaches
- Ocean
- Rivers/creeks/streams
- Swimming/attempting a rescue
- Boating/fishing
- Walking near water/rock walking

Males were 4.8 times more likely to drown than females.

Melbourne

Inner, Inner East, Inner South, North East, North West, Outer East, South East, West
Statistical Area 4 – Drowning Statistics 2007/08–2016/17

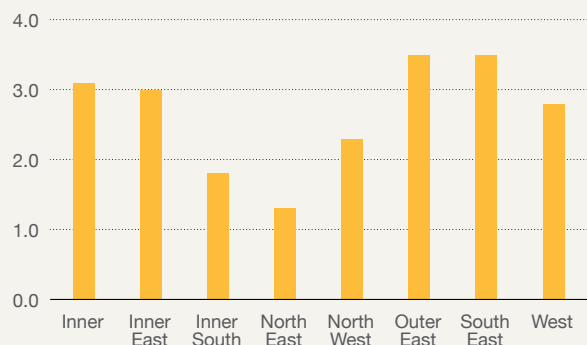


DROWNING STATISTICS FOR ALL MELBOURNE SA4S

Statistical Area 4	Drowning deaths in SA4	Drowning deaths of residents in SA4	Residents in SA4 hospitalised	Emergency Department Presentations of residents in SA4	Likelihood of one or more drowning deaths within SA4 in any given year	Likelihood of one or more residents drowning in any given year
Melbourne – Inner	37	34	75	66	98%	97%
Melbourne – Inner East	12	21	55	47	70%	88%
Melbourne – Inner South	25	21	65	46	92%	88%
Melbourne – North East	14	24	37	42	75%	91%
Melbourne – North West	10	16	41	42	63%	80%
Melbourne – Outer East	18	33	66	58	83%	96%
Melbourne – South East	18	41	102	68	83%	98%
Melbourne – West	23	36	78	91	90%	97%

DEMOGRAPHICS

Male : Female Drowning Ratio in Melbourne SA4s



LOCATION AND ACTIVITY

- Rivers/creeks/streams
- Beaches/ocean
- Bathtubs/spa baths
- Swimming pools
- Walking/recreating near water
- Swimming/paddling/wading
- Bathing

PROPORTION OF DROWNING DEATHS AND POPULATION BY AGE GROUP (YEARS)

Statistical Area 4	0-4		5-14		15-24		25-44		45-64		65+	
	Population	Drowning	Population	Drowning	Population	Drowning	Population	Drowning	Population	Drowning	Population	Drowning
Melbourne – Inner	5%	3%	7%	0%	16%	14%	42%	43%	20%	30%	11%	11%
Melbourne – Inner East	5%	0%	12%	17%	15%	8%	27%	17%	25%	8%	17%	50%
Melbourne – Inner South	6%	8%	12%	8%	12%	8%	27%	36%	26%	12%	16%	28%
Melbourne – North East	7%	21%	12%	7%	13%	36%	30%	14%	24%	7%	14%	14%
Melbourne – North West	8%	30%	13%	10%	13%	0%	30%	10%	23%	30%	13%	20%
Melbourne – Outer East	6%	11%	12%	11%	13%	22%	27%	28%	26%	11%	16%	17%
Melbourne – South East	7%	22%	13%	6%	15%	0%	30%	11%	22%	50%	13%	11%
Melbourne – West	8%	17%	13%	0%	13%	9%	33%	4%	22%	35%	10%	35%

Mornington Peninsula Statistical Area 4 – Drowning Statistics 2007/08–2016/17

50 Drowning Deaths

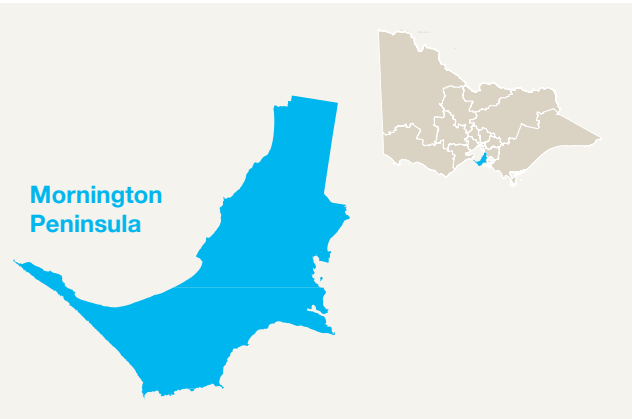
77 Mornington Peninsula SA4 residents hospitalised due to non-fatal drowning

79 Emergency Department presentations of Mornington Peninsula SA4 residents for non-fatal drowning

26 Mornington Peninsula SA4 Residents Drowned in Victoria

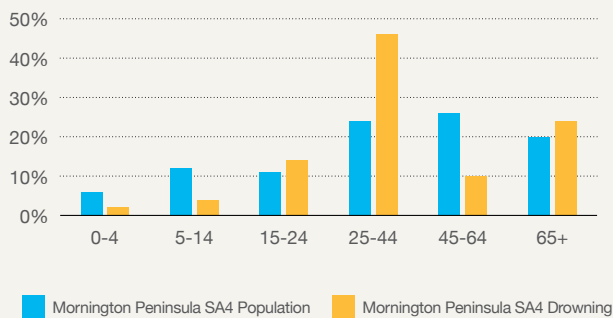
99% Likelihood of one or more drowning deaths occurring in Mornington Peninsula SA4 in any given year

93% Likelihood of one or more residents of Mornington Peninsula SA4 drowning in any given year



DEMOGRAPHICS

Proportion of drowning deaths and population by age group (years)



LOCATION AND ACTIVITY

- Beaches
- Ocean
- Rocky outcrops
- Swimming/paddling/wading
- Diving (SCUBA/snorkelling)
- Boating/fishing

Males were 5.3 times more likely to drown than females.

North West Statistical Area 4 – Drowning Statistics 2007/08–2016/17

8 Drowning Deaths

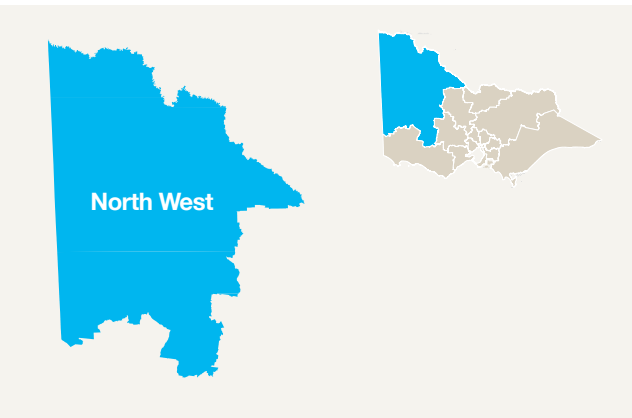
24 North West SA4 residents hospitalised due to non-fatal drowning

30 Emergency Department presentations of North West SA4 residents for non-fatal drowning

7 North West SA4 Residents Drowned in Victoria

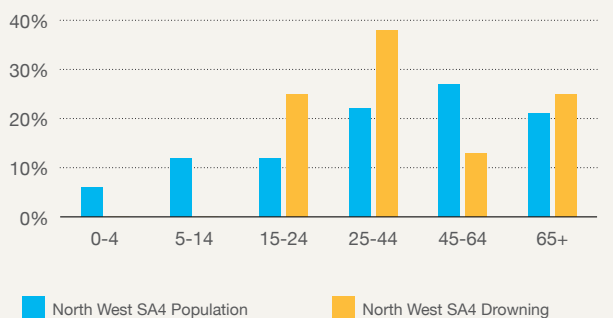
55% Likelihood of one or more drowning deaths occurring in North West SA4 in any given year

50% Likelihood of one or more residents of North West SA4 drowning in any given year



DEMOGRAPHICS

Proportion of drowning deaths and population by age group (years)



LOCATION AND ACTIVITY

- Lakes/dams/irrigation channels
- Rivers/creeks/streams
- Home swimming pools
- Swimming/attempting a rescue
- Boating
- Transport (for work/recreation)

Males were 8.0 times more likely to drown than females.

Shepparton Statistical Area 4 – Drowning Statistics 2007/08–2016/17

12 Drowning Deaths

32 Shepparton SA4 residents hospitalised due to non-fatal drowning

31 Emergency Department presentations of Shepparton SA4 residents for non-fatal drowning

14 Shepparton SA4 Residents Drowned in Victoria

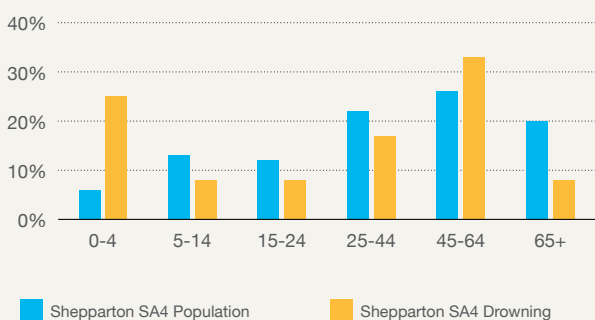
70% Likelihood of one or more drowning deaths occurring in Shepparton SA4 in any given year

74% Likelihood of one or more residents of Shepparton SA4 drowning in any given year



DEMOGRAPHICS

Proportion of drowning deaths and population by age group (years)



LOCATION AND ACTIVITY

- Bathtubs/spa baths
- Lakes/dams/irrigation channels
- Rivers/creeks/streams
- Walking/recreating near water
- Bathing
- Boating

Males were 5.0 times more likely to drown than females.

Warrnambool and South West

Statistical Area 4 – Drowning Statistics 2007/08–2016/17

29 Drowning Deaths

18 Warrnambool and South West SA4 residents hospitalised due to non-fatal drowning

16 Emergency Department presentations of Warrnambool and South West SA4 residents for non-fatal drowning

20 Warrnambool and South West SA4 Residents Drowned in Victoria

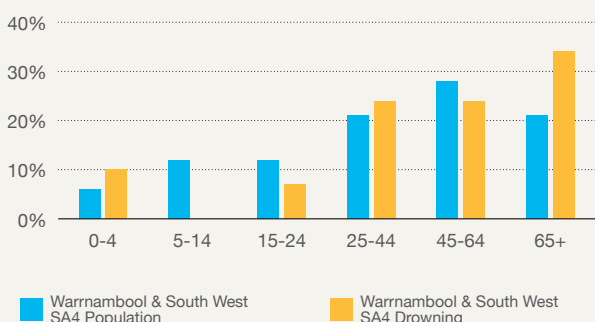
94% Likelihood of one or more drowning deaths occurring in Warrnambool and South West SA4 in any given year

86% Likelihood of one or more residents of Warrnambool and South West SA4 drowning in any given year



DEMOGRAPHICS

Proportion of drowning deaths and population by age group (years)



LOCATION AND ACTIVITY

- Ocean
- Beaches
- Rivers/creeks/streams
- Boating
- Walking/recreating near water
- Diving (SCUBA/snorkelling)

Males were 13.5 times more likely to drown than females.

AGENCIES

Life Saving Victoria
 Aquatics & Recreation Victoria
 Australian Sailing
 Australian Volunteer Coast Guard
 AUSTSWIM
 Belgravia Leisure
 Boating Industry Association
 Coroners Prevention Unit
 Dragon Boating Victoria
 Kidsafe Victoria
 Kiteboarding Australia
 Landscaping Victoria
 Outdoors Victoria
 Paddle Victoria
 Surfing Victoria
 Swimming Pool and Spa Association of Victoria
 Swimming Victoria
 Triathlon Victoria
 Victorian Municipal Building Surveyors Group
 Victorian Recreational Fishing
 VR Fish
 YMCA Victoria

GOVERNMENT ENTITIES

Ambulance Victoria
 Country Fire Authority
 Department of Education and Training
 Department of Environment, Land, Water & Planning
 Department of Justice and Regulation
 Emergency Management Victoria
 Emergency Services Telecommunications Authority
 Municipal Association of Victoria
 Parks Victoria
 Royal Children's Hospital Safety Centre
 State Emergency Service
 Transport Safety Victoria
 Tourism Victoria
 Victoria Police
 Victorian Building Authority
 Victorian Coastal Council
 Victorian Fisheries Authority
 Victorian Multicultural Commission

LOCAL GOVERNMENT AREAS AND LAND MANAGERS

Financial contributors to the Victorian Paid Lifeguard Service.
 Barwon Coast Committee of Management INC
 Bass Coast Shire Council
 Colac Otway Shire Council
 East Gippsland Shire Council
 Glenelg Shire Council
 Great Ocean Road Coast Committee
 Greater Geelong City Council
 Greater Geelong City Council – Waterfront
 Mornington Peninsula Shire Council
 Moyne Shire Council
 Parks Victoria Wilsons Promontory National Park
 Borough of Queenscliffe
 South Gippsland Shire Council
 Surf Coast Shire Council
 Warrnambool City Council
 Wellington Shire Council

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This report includes unintentional fatal and non-fatal drowning incidents reported in Victoria, Australia. An overview of fatal drowning for 1 July 2017 to 30 June 2018 is provided and compared with non-fatal drowning incidents for the same period. Comparisons between the latest financial year and 5 or 10-year averages were calculated from fatal and non-fatal drowning data in Victoria from 1 July 2007 to 30 June 2018.

FATAL INCIDENTS

Information on fatal drowning incidents was collected from the Coroners Court of Victoria, and the National Coroners Information System (NCIS). Deaths due to natural causes, suicide, or homicide are excluded from this report.

Coronial information relates to both open and closed cases. While all care is taken to ensure that the results are as accurate as possible, these figures are provisional only as coronial investigations and findings relating to open cases may alter the reported drowning figures. At the time of compilation 95% of suspected unintentional drowning cases in 2017/18 remained open on the NCIS.

NON-FATAL INCIDENTS

Information on non-fatal drowning in 2017/18 was provided by Ambulance Victoria (AV). Cases of non-fatal and immersion related injuries attended by AV paramedics were extracted from the VACIS® clinical information system. Potential drowning data for this report were identified via a database search for all drowning related dispatch codes identified at the emergency call-taker level, as well as cases in which paramedics reported a final assessment of 'post immersion'. Only patients reported as suffering respiratory compromise or vomiting as a result of immersion were included in analyses.

Information on non-fatal drowning from 2007/08 to 2016/17 was provided by the Victorian Injury Surveillance Unit (VISU). Data included non-fatal and immersion related injuries extracted from the Victorian Emergency Minimum Dataset (VEMD) and Victorian Admitted Episodes Dataset (VAED) for the period 1 July 2007 to 30 June 2017.

The VEMD is a dataset containing records of emergency department presentations in Victorian hospitals with 24-hour emergency services. 100% state wide coverage of these hospitals applies from 2004. Data was selected if the cause of injury was 'drowning/near drowning' or the terms 'drown', 'submerged', 'immersion' and their variations were included in the "Description" variable. Further all injuries with an injury coded to drowning or immersion were also selected. Finally, any injury coded to a drowning or non-fatal drowning cause code with the mention of 'decompression illness' in the description was also chosen. These cases were then manually screened to ensure that they were submersion or non-fatal drowning cases. Cases were retained if the "Human

Intent" was coded to "Non-intentional harm". Cases were limited to incidence (excludes return visits and pre-arranged admissions).

The VAED is a record of all hospital admissions in the state of Victoria. VAED data is coded to the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modifications (ICD-10-AM). VAED records were initially extracted if the principal diagnosis was a community injury (S00-T75 or T79 ICD 10 AM code). Cases were then extracted if there was a drowning injury diagnosis (ICD 10 AM code of T75.1 "Drowning and non-fatal submersion") anywhere in the 40 diagnosis codes or the external cause code was in the range W65-W71 (accidental drowning and submersion) or V90 (accident to water craft causing drowning and submersion) or V92 (water-transport-related drowning and submersion without accident to watercraft). Admissions as a result of transfer from another hospital or due to a statistical separation from the same hospital were excluded. Readmissions for day-treatments within 30 days of initial admission were excluded.

Drowning deaths from either AV or VISU data were excluded to avoid an overlap with Life Saving Victoria (LSV) fatal drowning data.

INCIDENCE CALCULATIONS

Incidence calculations were performed using population figures published by the Australian Bureau of Statistics, 2016 (Australian Bureau of Statistics [ABS], 2016a).

RELATIVE RISK MAPS

Relative risk maps were created to illustrate the degree to which observed drowning risk is greater than or less than the expected drowning risk at that location. Relative risk ratios were calculated using grouped event counts (incident and residence) and population counts within each postcode. This method was applied across multiple timeframes for time-based comparative analysis.

The maps illustrate relative risk for each of the 17 Victorian SA4's. These were computed using incident and place of residence postcodes relative to each SA4. As the analysis included time-based comparisons, the events were portioned into two equal 5-year timeframes (2007/08 to 2011/12 and 2012/13 to 2016/17) along with an overall 10-year analysis (2007/08 to 2016/17).

The underlying population counts were taken from two censuses; 2011 and 2016. The following counts were used for the aggregate event timeframes:

- 2011 census for events from 2007/08 to 2011/12 (ABS, 2016b)
- 2016 census for events from 2012/13 to 2016/17 (ABS, 2016b)

For the overall 2007/08 to 2016/17 aggregated 10-year relative risk calculation, an average of the two censuses was used. This approach was used to reflect changing population counts within the different SA4's over the 10-year study timeframe.

PROBABILITY MAPS

Probability maps for Victorian Statistical Area Level 4 (SA4) regions were created demonstrating the likelihood of at least one drowning event occurring within each of the 17 Victorian regions. Probabilities were calculated based on 10-year means (from 2007/08 to 2016/17) in each of the SA4 regions. Using annualised means provides the ability to calculate the probability of one or more drowning events in each SA4 for any given year.

Probabilities are provided for both drowning incident location and place of residence. These locations were calculated based on the postcode of the incident and the residence at the time of each drowning event. By using the postcodes, spatial overlays were used to count the number of cases relative to each of the SA4's over the 10-year study timeframe.

GEOGRAPHICAL CLASSIFICATION

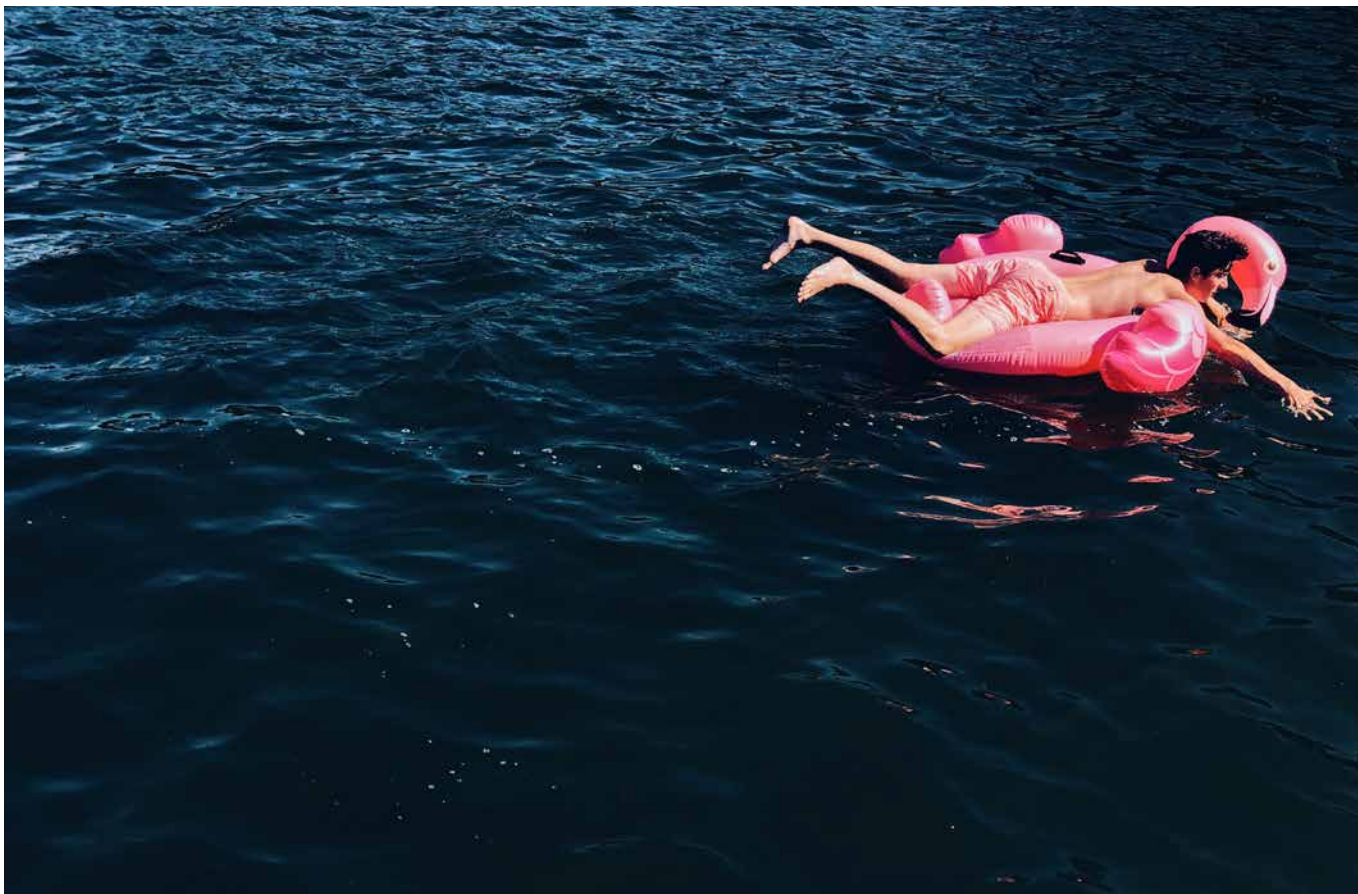
Geographical classification of fatal and non-fatal drowning variables utilised the Australian Statistical Geography Standard (ASGS; ABS, 2016c). The ASGS is the Australian Bureau of Statistics' geographical framework. Data was categorised into Remoteness Areas and Statistical Areas. Data was extracted from the Census DataPack applicable to each census period. These can be accessed from the Australian Bureau of Statistics website:

<http://www.abs.gov.au/websitedbs/D3310114.nsf/home/ABS+Geography+Publications>

MURRAY RIVER FATAL DROWNING ANALYSIS

This year's report includes analysis of Victorians who drowned in the Murray River from 2007/08 to 2017/18.

Information on incidents was collected from the Royal Life Saving National Fatal Drowning Database and the NCIS. Methods for reporting these incidents is as per all Victorian fatal drowning incidents as reported above.



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- Emergency Management Victoria, Department of Justice
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- Royal Life Saving Society – Australia
- Surf Life Saving Australia
- Victorian Injury Surveillance Unit

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Dr Bernadette Matthews is Principal Research Associate for Life Saving Victoria. Bernadette has over 10 years experience in aquatic injury research including the epidemiology of fatal and non-fatal drowning, swimming competency in children and adults, aquatic safety signage recognition and recall, eye-tracking research, through to monitoring and evaluation of multicultural programs, education, training and aquatic sport. In 2017, Bernadette was awarded the International Life Saving Federation Medal for her contribution to international lifesaving.

Rhiannon Birch is the Project Coordinator – Risk and Research for Life Saving Victoria. Rhiannon assists in the planning and coordination of LSV's research on injury prevention and water safety issues, including inland waterways drowning prevention, water competency among children and older adults in Victoria, coastal risk assessment, public pool safety, multicultural campaigns and international drowning prevention research. Rhiannon holds a Bachelor of Environmental Science and Graduate Diploma in Education.

Robert Andronaco is the Risk and Spatial Analysis Specialist at Life Saving Victoria. In his role he focuses on quantifying drowning risk and assisting land managers in mitigating assessed risks specific to recreational drowning and injury. Robert uses both traditional statistical approaches and spatial statistical analysis approaches in quantify drowning risks. Robert holds a Masters in Sport and Recreation Management and a Post Graduate Diploma in Risk Management. He is a current PhD candidate at RMIT in the School of Mathematics and Geospatial Science.

Grace Strugnell is the Project Officer – Risk and Research at Life Saving Victoria. Grace assists with research studies and assessments, conducted through extensive data collection, literature examination, monitoring, evaluation, reporting and ethical storage, for a range of water safety and drowning prevention initiatives. This encompasses a vast range of environments and demographics, including controlled and open waterways, metropolitan, regional and remote communities, and vulnerable groups to drowning. Grace is nearing completion of her Bachelor of Public Health and Health Promotion at Deakin University, Melbourne.

**“THIS YEAR 40 PEOPLE DROWNED
IN VICTORIA. THAT MEANS THAT
40 FAMILIES HAVE HAD TO
EXPERIENCE THE UNBEARABLE
GRIEF OF LOSING SOMEONE THEY
LOVE, TO A FATE THAT SHOULD
HAVE BEEN PREVENTABLE.”**

Dr Nigel Taylor ESM
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