

## **Activity**

### **How safe is it to be in, on or around water?**

**This activity is based on the New Zealand drowning statistics.**

**The activity can be used with the Mathematics and Statistics Achievement Objective Level 2 Statistical Investigation.**

**Alternatively the activity can be used as a part of any inquiry into the causes of drowning in New Zealand.**

**It can be used to answer all or some of these questions:**

- 1. How many New Zealanders drown each year?*
- 2. How old are those people who drown?*
- 3. Do more males or females drown each year?*
- 4. What are people doing when they drown?*
- 5. Where do people drown?*
- 6. How many people drown in our area?*
- 7. How many people drown when they are alone?*
- 8. How many people get hurt in water-related accidents?*

The activity has been set up with the class looking at the first two graphs with a teacher led discussion and then groups of students completing a jigsaw activity where they interpret a graph or a statistic and present this to the class.

The presentation used could be a poster, drama, or one or two PowerPoint screens.

The statistics are provided by WaterSafety New Zealand and are accurate at 1/1/2009. They provide knowledge about fatal incidents in, on or around water in New Zealand.

The graphs and activity are provided as a separate download –

**[http://www.watersafety.org.nz/pdfs/bewaterwise/tables\\_graphs.pdf](http://www.watersafety.org.nz/pdfs/bewaterwise/tables_graphs.pdf)**

A page of statistical information is provided if you want your students to draw the graphs.

Students use their present knowledge to suggest how the death by drowning toll can be reduced. They can revisit this task at the end of the learning programme.

## 1. How many New Zealanders drown each year?

- Ask the students to estimate or make a prediction of how many New Zealanders drown each year then examine the graph **New Zealand Annual Drowning Figures** and see how close their estimate was.
- Have the students determine if the number of drownings has been going up or down in the last ten years.
- Relate the number of deaths in the last year to the size of your school, or community, or how many rugby or netball teams, or other relevant local data.
- Discuss with the students why New Zealand has such a high drowning rate. Use the checklist below to make sure students consider a range of the following reasons.

Close proximity of all New Zealanders to water.

Our love of outdoor activities, especially in summer.

Low focus on safety, high focus on involvement, taking risks, having fun.

Lack of knowledge of the power or dangers of water.

Lack of swimming and water safety skills of individuals.

Overconfidence of some people in, on and around water.

Not carrying or wearing the right equipment.

Bravado, heroism, lack of consideration for others.

Influence of T.V, video games etc that encourage people to think you can do things like jump off high places into rivers without training or previous experience, and without the likely consequence of being hurt or killed.

New Zealand's changeable weather, rough seas, etc.

- Ask the students how they think we can bring the drowning figures down. Record this information and revisit it at the end of the programme to see if the students want to add to or amend their answers.
- As an extension activity you can ask the students
  - what they think is an acceptable number of New Zealanders to die by drowning each year and
  - why they think the number is acceptable.

## 2. How old are those people who drown?

- Show the students the graph **Drowning Statistics by Age Group**.
- Either discuss these facts with your class or have your class work in groups and suggest reasons for the high death rate for 0-14 year olds, and 20-40 year olds and compare their answers with the information provided.

## Some drowning facts related to age group

### Under fives

Each year a number of babies and children under five die because they are left unsupervised in, on or near water.

They could be left unsupervised in the bath.

They could fall into, and not be able to get out of:

- unfenced or unattended home pools
- blow up (inflatable) pools
- drains
- water containers like buckets
- neighbourhood troughs or ponds.

### 5 to 14 year olds

When children between five and fourteen die each year in aquatic accidents this is often because

- they do not have the swimming skills, safety skills and experience needed for the situations they get into
- they go beyond their personal skill level because their friends or peers encourage them to
- they are not supervised by an adult.

### 20 to 35-year olds

There is a peak in the number of deaths between 20 and 35 because

- this age group is involved in lots of activities in, on and around water
- young people, especially males, are prepared to take risks and try new things with no focus on their safety. This is a time when people are often overconfident and take risks in cars, on bikes or in boats and in the water
- they underestimate the water or weather conditions e.g. tides, rips.

### Over 35-year olds

Beyond 35 people often have families and take fewer personal risks and are more water safety conscious.

### Everybody

Many people have swimming and water safety skills for one aquatic environment (pool, beach, river, estuary, lake etc) but not another.

People who are used to swimming in swimming pools may not have experience of cold or fast flowing water in rivers, or of large waves and rips that are features of some beaches.

## Part B

- Ask each group to
  - look at their graph or statistic and discuss it
  - read any other information provided, or follow any other instructions
  - present the question and the information to the class in an interesting way.

*Please note there is some variation in the complexity of the graph or statistic interpretation within the six tasks.*

### 1. Do more males or females drown each year?

- Give a group the graph **Drowning Statistics by Gender** and have them
  - discuss why they think more males drown than females
  - compare what they discussed with the facts provided and
  - present their information and conclusions.

### Facts about the male drowning rate

Four of the reasons more males drown than females are

- more males are involved in commercial and recreational activities in, on or around water
- males take more risks than females do in, on and around water

- males are more likely to be overconfident or over-estimate their skill level than females
- the male body-shape and weight-distribution make it harder for males to float than females.

### 2. What are people doing when they drown?

- Give a group the graph **Drownings by Activity** and have them
  - discuss the graph, relating the statistics to the water-related activities they take part in and compare the statistics associated with their water-based activities to other water-based activities, and make some conclusions about what they found out
  - present their information and conclusions.

An explanation of the term 'immersion accident' is needed to understand these statistics.

An immersion accident is when someone who has no intention of being in the water ends up in the water and drowns.

This could be

- a toddler falling into a home pool
- someone walking by the river when the bank caves in
- someone walking on slippery rocks and falling into the sea or
- a car involved in an accident that ends with it submerged in water.

### 3. Where do people drown?

- Give a group the graph **Drowning Statistics by Site** and have them
  - agree on ten facts they found most interesting or relevant to your area and
  - present their information and conclusions.

### 4. Drownings in your area

- Give a group the graph **Drowning by Area** and have them
  - discuss the number of drownings in you area
  - compare it with the number of drownings in at least two other areas
  - give some possible reasons for your area's drowning statistic and
  - present their information and conclusions.

### 5. Drowning alone

*In the year 2005, 48 of the 114 people who drowned were alone when they drowned. This is 42% of all drownings. 21 of these people drowned in rivers, streams and creeks.*

- Give a group the statistic and have them
- work out why:
  - ★ as a teenager or adult you should never do an aquatic activity on your own
  - ★ babies and small children should never be left alone in, on or around water
  - ★ home pools must be fenced
  - ★ children under 8 must be accompanied by a person over 16 at public swimming pools or near water and
- present their information and conclusions.

## 6. People who get hurt in accidents in, on or around water?

*Research shows that for every person who is drowned in a accident there are eight people who suffer serious injuries in an accident in, on around water.*

- Give a group the statistic and have them
  - estimate how many people were seriously injured in aquatic accidents last year using the information from the graph **New Zealand Annual Drowning Figures**
  - consider what impact this statistic could have on the individuals and families involved and
  - present their information and conclusions.

## Part C

### Telling others about what we have learned about our drowning statistics

- Discuss with the students what they have learnt from the statistics and the group presentations and decide what they think other students their age, and their families, should know about our drowning statistics.
- Display the presentations and other facts the students think are important.
- Have the students prepare an illustrated class booklet that can be used to discuss what they have learnt with the wider school community for example parents, whānau or other classes. This information can be added to as the students complete the learning programme.

# 2008 Drowning Statistics for Graphs



Year	No.
1980	210
1981	184
1982	188
1983	173
1984	173
1985	214
1986	178
1987	163
1988	167
1989	162
1990	156
1991	147
1992	130
1993	154
1994	130
1995	159
1996	140
1997	138
1998	148
1999	125
2000	132
2001	121
2002	139
2003	126
2004	122
2005	120
2006	90
2007	110
2008	96

Environment	No.
Rivers	37
Offshore	17
Beaches	16
Tidal Waters	11
Inland Still Waters	9
Home Pools	4
Public Pools	2
Grand Total	96

Activity	No.
Water Sport / Recreation	30
Immersion Incident	27
Land Based Fishing	9
Non Powered Boat	7
Other Activities	7
Powered Boat	5
Underwater	5
Sailing	4
Occupational Related	2
Grand Total	96

Fatality	Total
With Others	41
Alone	35
Multiple Drownings	20
Grand Total	96

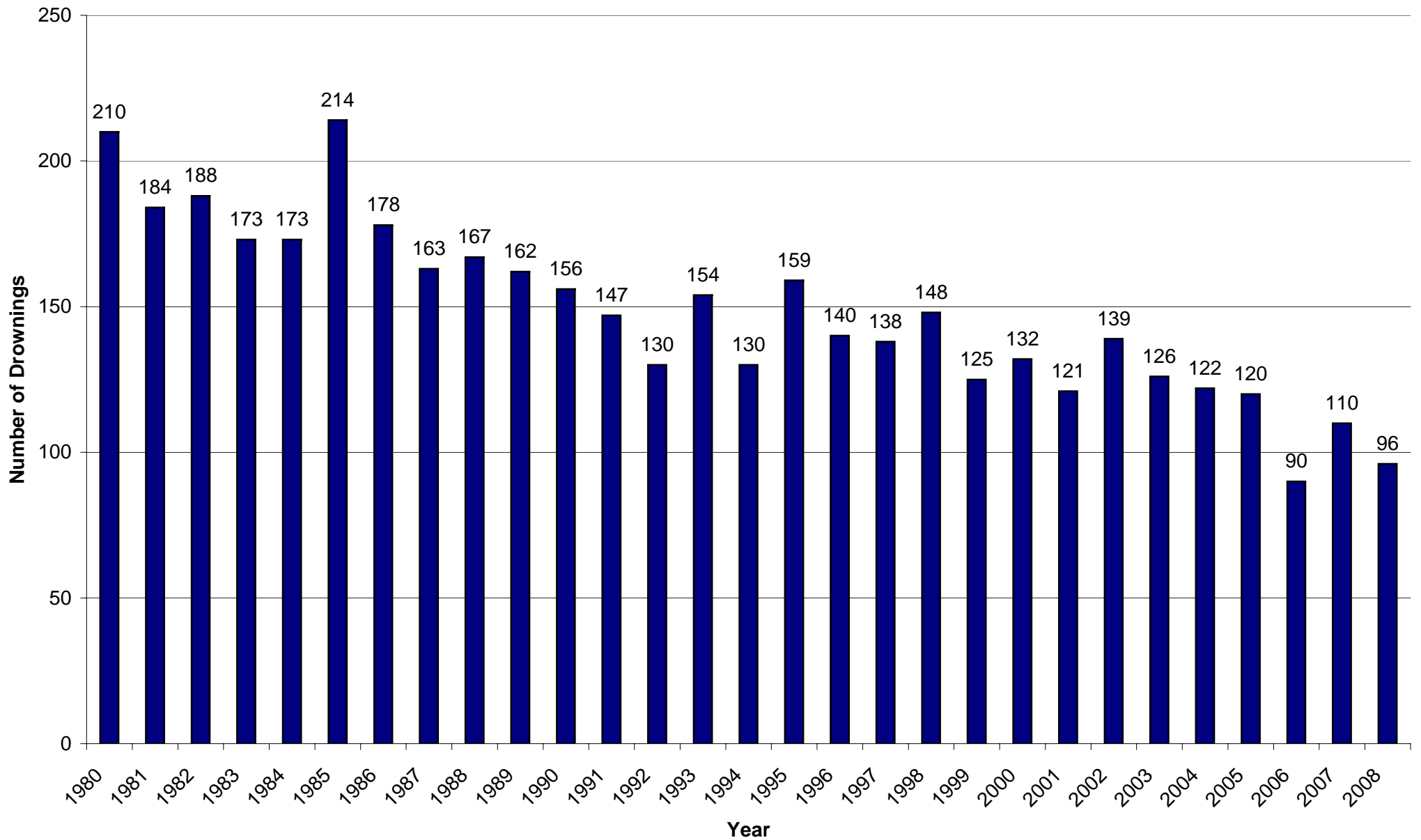
AgeGroup	No.
00 - 04	7
05 - 14	3
15 - 24	18
25 - 34	15
35 - 44	11
45 - 54	21
55 - 64	12
65+	9
Grand Total	96

Gender	No.
Male	73
Female	23
Grand Total	96

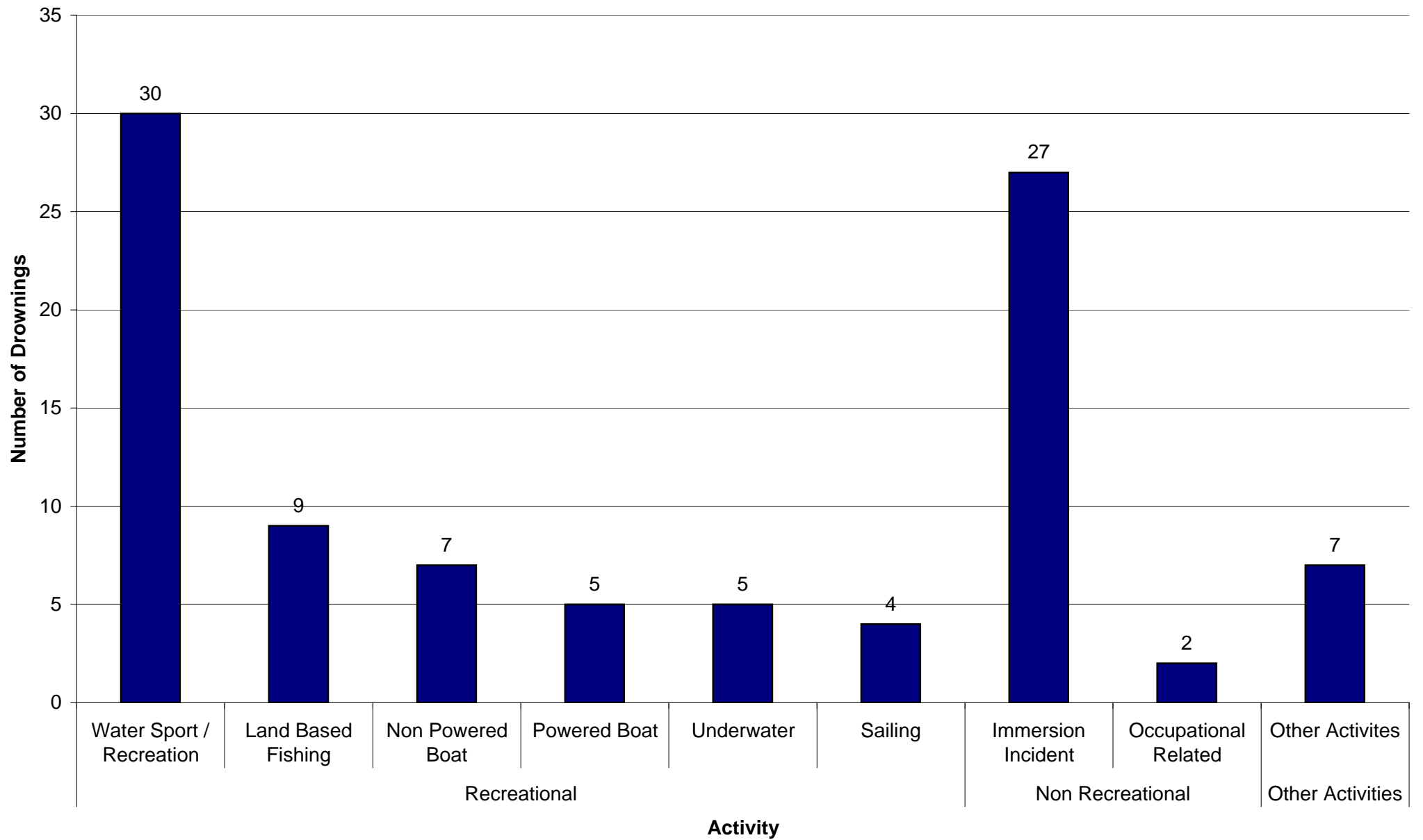
Ethnicity	No.
NZ European	52
Maori	18
Pacific Peoples	9
Other	7
Asian	5
Unknown	5
Grand Total	96

Region	No.
Auckland	20
Waikato	12
Canterbury	11
Manawatu-Wanganui	11
Bay of Plenty	10
Northland	7
Otago	7
Hawkes Bay	5
West Coast	5
Wellington	3
Taranaki	2
Tasman	2
Chatham Islands	1
Grand Total	96

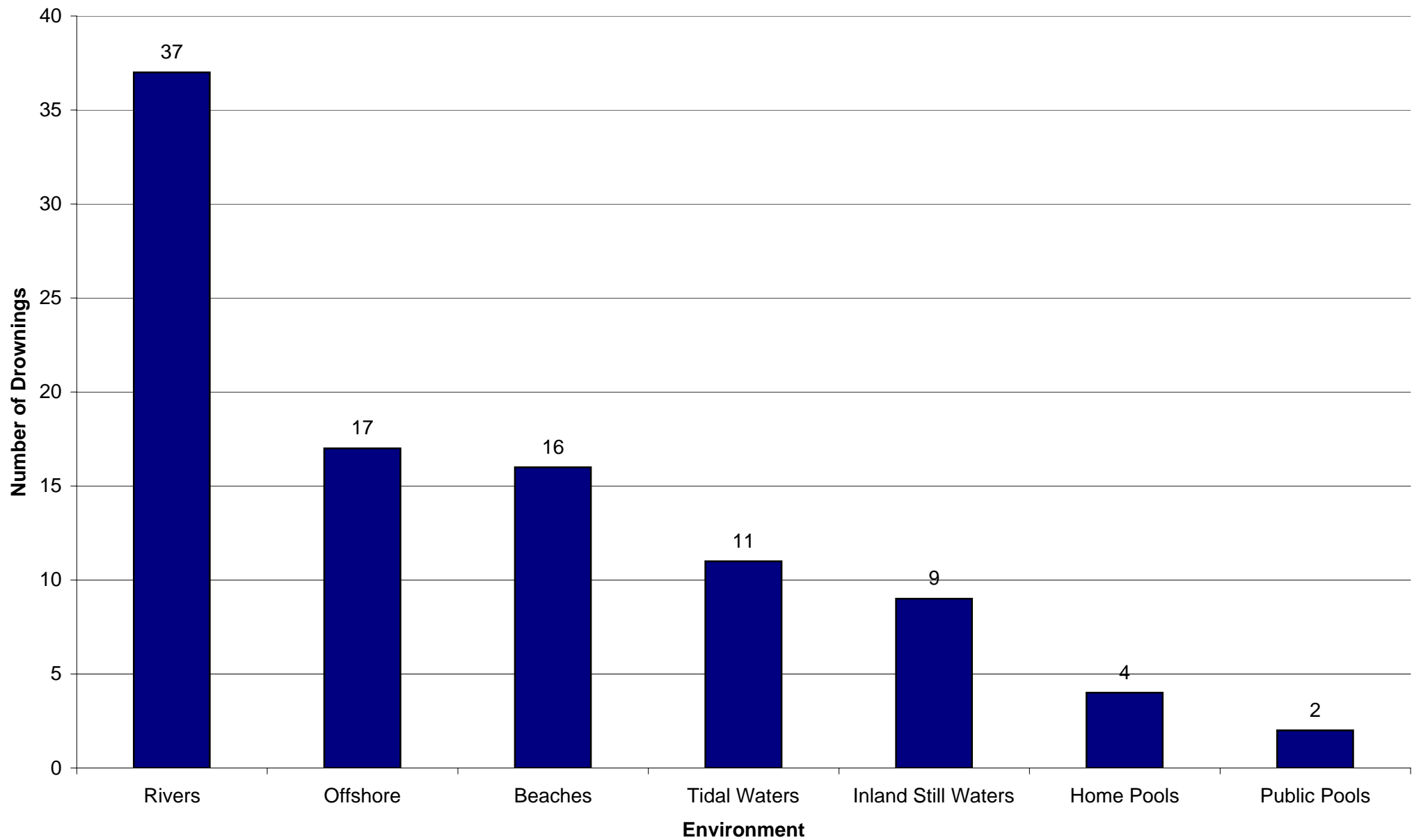
## Drownings By Year



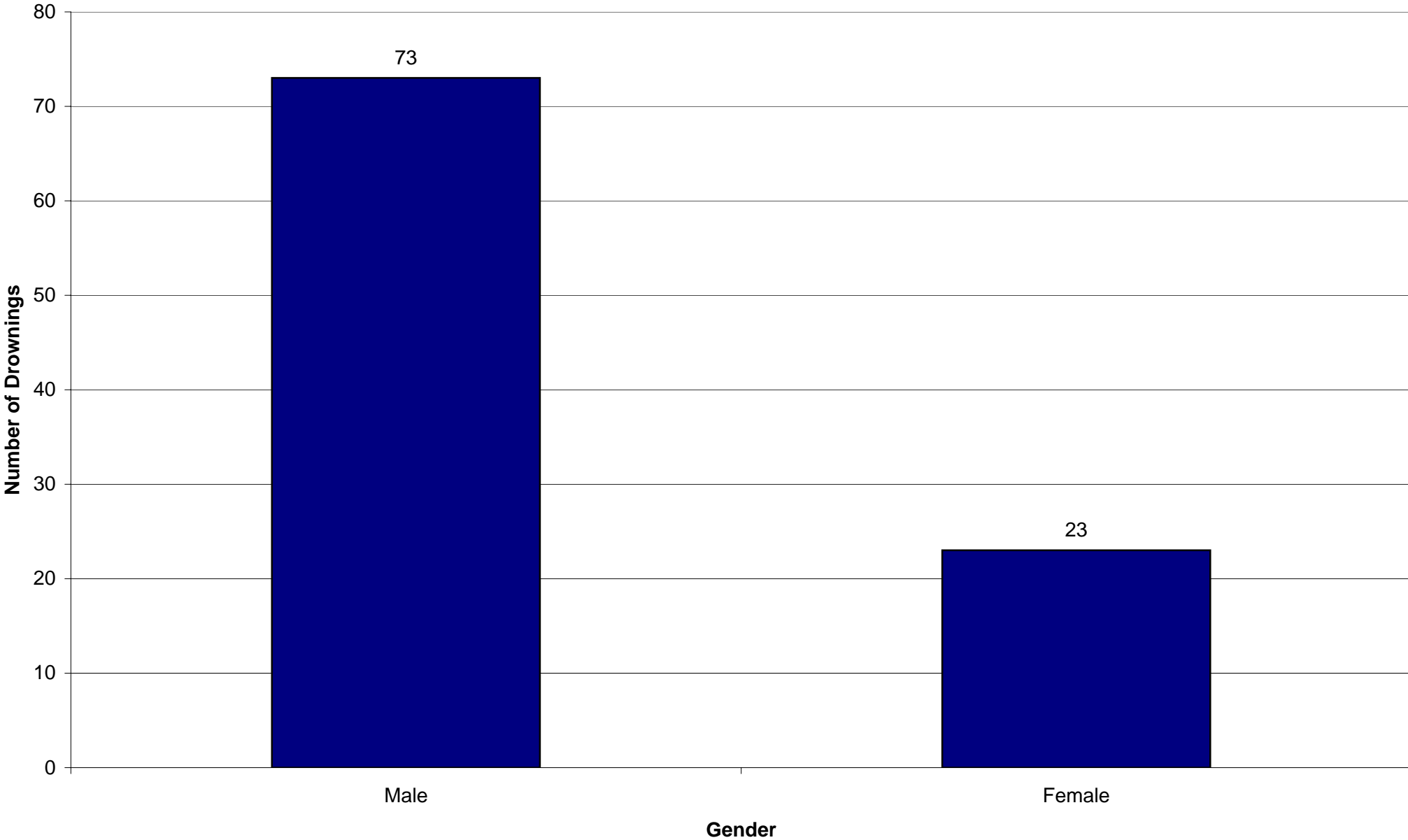
## 2008 Drownings By Activity



## 2008 Drownings By Environment

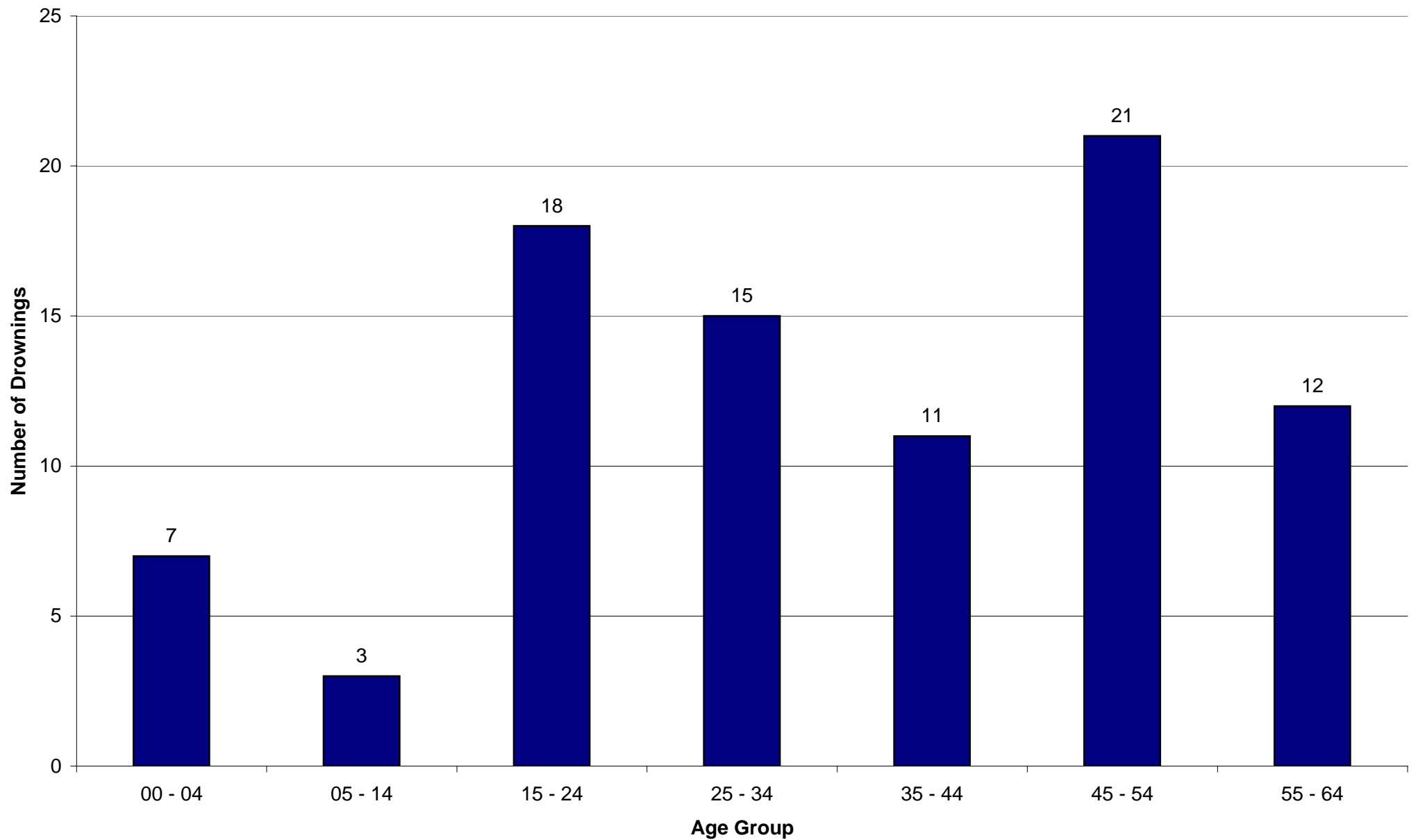


# 2008 Drownings By Gender

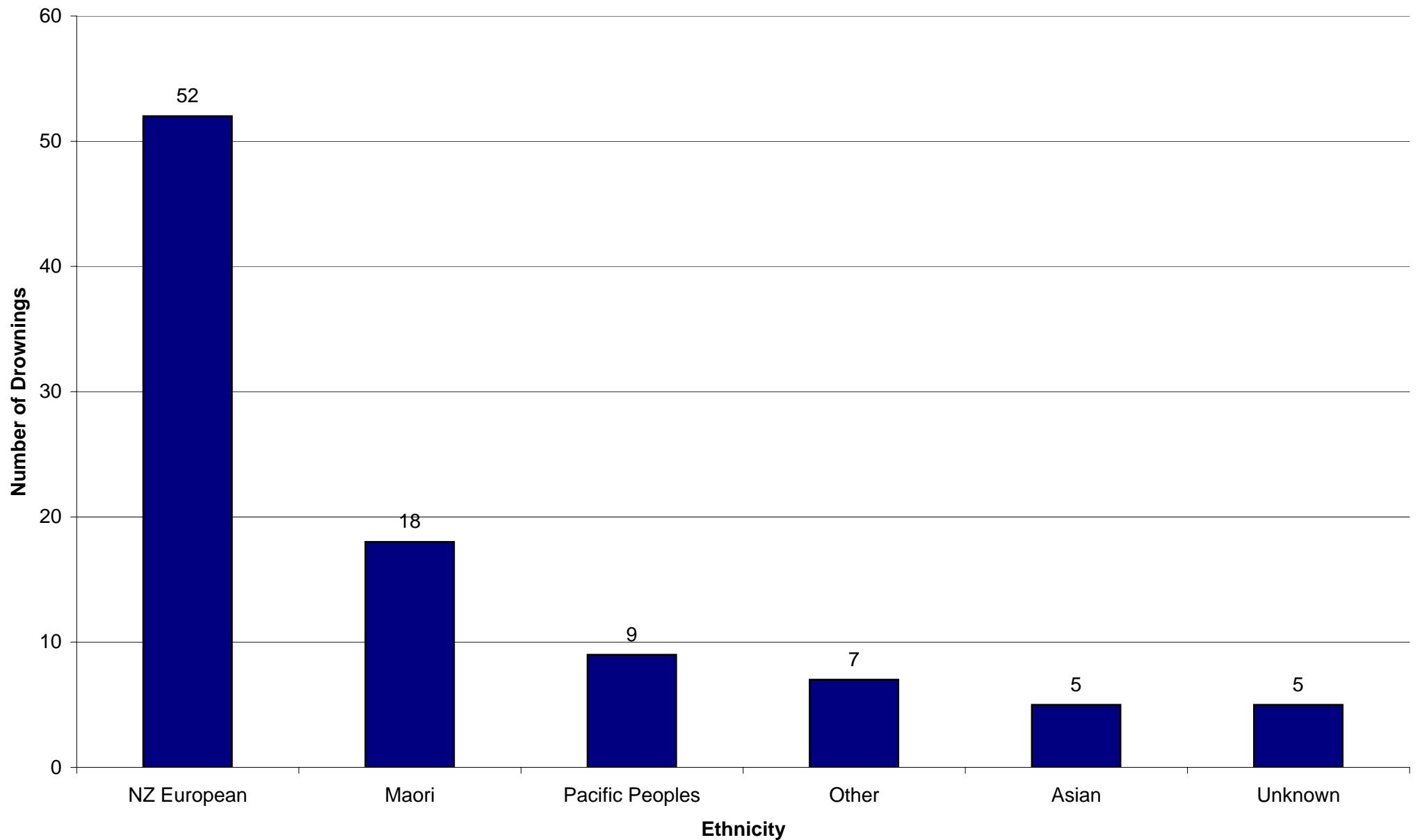


Statistics from Water Safety New Zealand's DrownBase

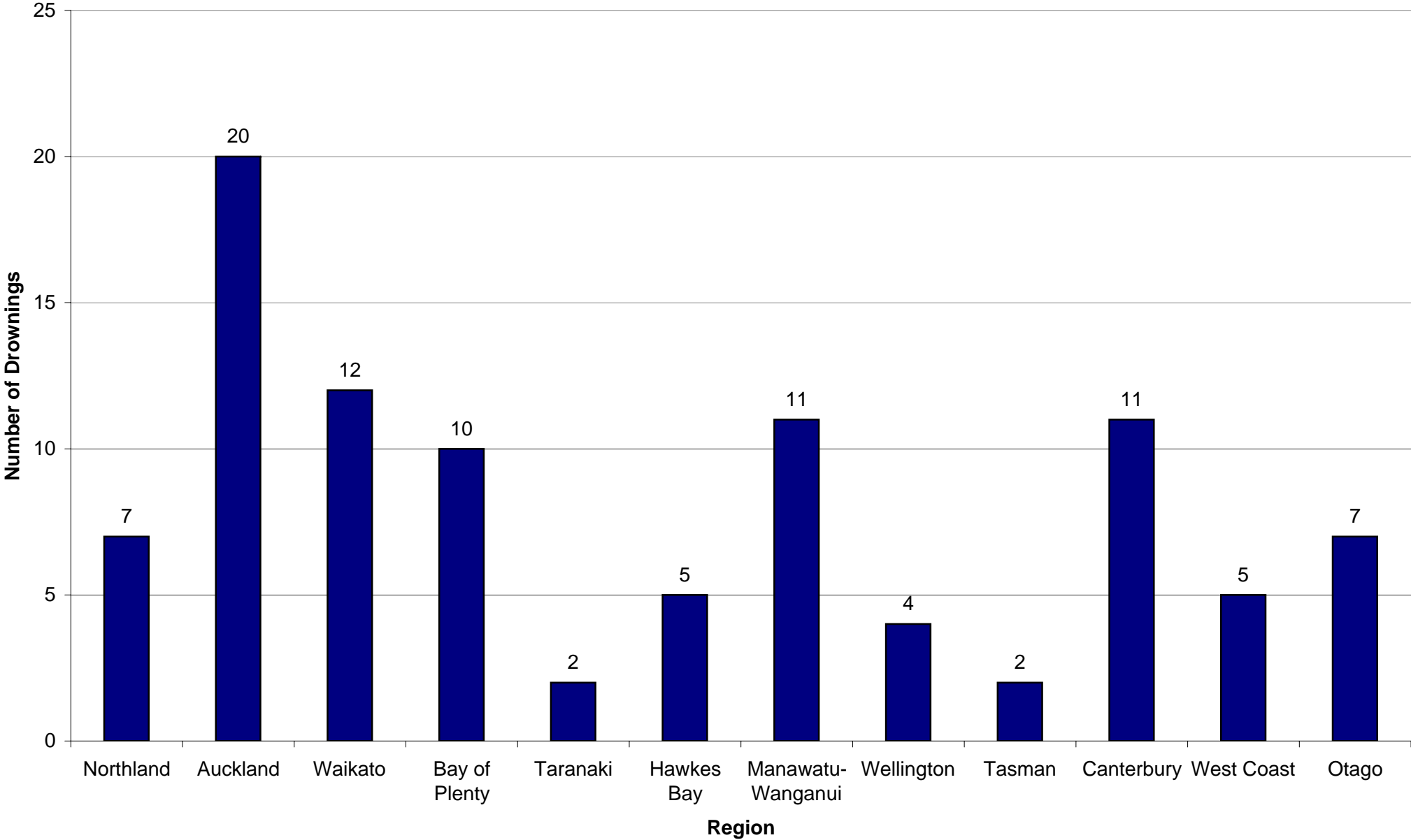
## 2008 Drownings By Age Group



## 2008 Drownings By Ethnicity



# 2008 Drownings By Region



Statistics from Water Safety New Zealand's DrownBase

# 2008 Drownings By Fatality

