The Allen Consulting Group

Valuing an Australian Icon

The Economic and Social Contribution of Surf Lifesaving in Australia

October 2005

Report to Surf Life Saving Australia Limited

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Summary and overview

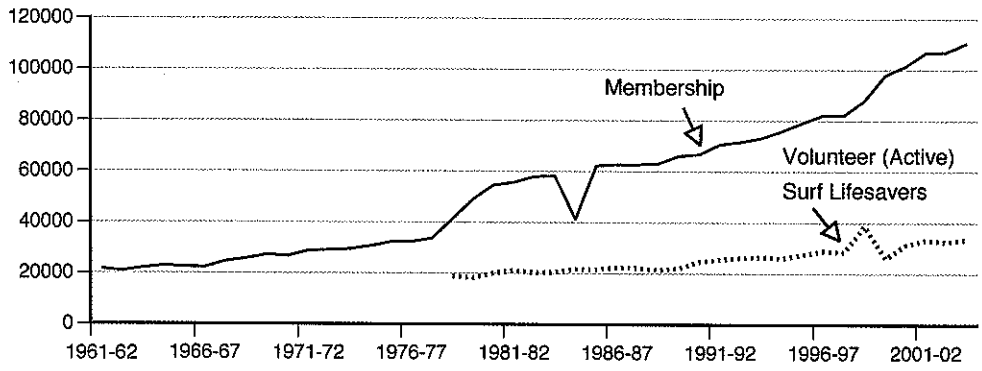
Surf Life Saving Australia has a proud heritage ...

With almost 100 years of history and tradition, surf lifesavers are an iconic piece of the Australian national character. The image of the bronzed Aussie surf lifesaver has been immortalised in story, song and verse, and is known throughout the world as being quintessentially Australian.

... and remains strong today ...

With such a proud past, it is all too easy to overlook that Surf Life Saving Australia (SLSA) remains possibly the greatest single volunteer service organisation in Australia. With 110 000 members and 33 500 volunteer surf lifesavers (see figure below) spread across 303 clubs, SLSA is growing in support when many other service organisations are declining.[1]

SLSA MEMBERSHIP AND VOLUNTEERS



... although its contribution to the community has not been well appreciated

This report identifies the value of surf lifesaving to the Australian community by looking at both the:

- direct value of volunteer surf lifesavers to beachgoers; and
- the wider community impacts arising as a result of volunteer surf lifesaving.

The direct value of volunteer surf lifesavers

Input approach

Focusing on the inputs used to provide surf lifesaving services ...

The input approach to valuing the direct contribution of surf lifesaving identifies costs of providing surf lifesaving services, including:

- the imputed value of the time spent by volunteers; and
- the value of salaries for volunteer services, if salaries were paid, and the economic expenditure by surf life saving clubs and governing national, state and territory bodies.

... values SLSA services at $134.8 million in 2003-04 ...

[1] Productivity Commission 2003, *Social Capital: Reviewing the Concept and its Policy Implications*, Research paper, AusInfo, Canberra, p. 30.

The total value of surf lifesaving services in 2003-04 using the input based approach is $134.8 million, distributed across Australia as shown in the table below.

VALUE OF SURF LIFESAVING ACTIVITY IN 2003-04 — INPUT APPROACH ($ MILLION)

Jurisdiction	Total input value
New South Wales	52.7
Queensland	36.8
Victoria	12.9
South Australia	3.9
Western Australia	7.4
Tasmania	1.6
Northern Territory	0.7
Surf Life Saving Australia (including Surf Sports Australia Pty Ltd)	18.9
Total expenditure	**134.8**

Note: Values rounded to the nearest $0.1 million and so may not sum to totals.

... but this estimate fails to account for the full value of surf lifesaving ...

The input approach is limited in that it focuses on the costs of lifesaving services and so fails to capture the value that surf lifesaving actually provides directly to the community.

Output approach

... and so a focus on the outputs is more appropriate ...

An alternative approach — the output approach — identifies the value of the lives lost and injuries sustained had surf lifesaving services not been available. This approach better reflects the value of volunteer surf lifesavers and surf lifesaving activities.

... which values SLSA at $1.4 billion in 2003-04 ...

The total value of surf lifesavers in 2003-04 using the output based approach is just over $1.4 billion, distributed across Australia as shown in the following table.[2] This value can also be expressed as a as a benefit per volunteer surf lifesaver, and equals around $42 000 per lifesaver.

[2] The last estimate of the value of lifesaving outputs was $600 million in 1995-96 — *Australian Surf Lifesaver* 1996, 'Telling it like it is', No. 25, August, p. 4. This estimate only took into account the value of lives lost, while the current estimate includes the value of injuries avoided.

VALUE OF LIVES SAVED AND ASSISTED ($ MILLION)

	Drowning	Permanent incapacitation	Minor first aid	Total
NSW	429.6	293.6	<0.1	723.2
Qld	301.3	205.9	<0.1	507.3
Vic	35.3	24.1	<0.1	59.3
SA	27.3	18.7	<0.1	46.0
WA	33.8	23.1	<0.1	56.9
Tas	3.4	2.3	<0.1	5.8
NT	1.0	0.7	<0.1	1.6
Total	**831.7**	**568.3**	**<0.1**	**1400.0**

Note: Values rounded to the nearest $0.1 million and so may not sum to totals.

... spread fairly evenly between metropolitan and non-metropolitan beaches

As shown in the table below, just less than half (46.1 per cent) of the total lives saved and injuries prevented are in metropolitan areas of Australia (including Geelong and the Gold Coast).

DISTRIBUITION OF BENEFITS FROM LIFE SAVING ($ MILLION)

	Metropolitan	Non-metropolitan	Total
NSW	312.4	410.8	723.2
Qld	219.1	288.2	507.3
Vic	25.6	33.7	59.3
SA	19.9	26.1	46.0
WA	24.6	32.3	56.9
Tas	2.5	3.3	5.8
NT	0.7	0.9	1.6
Total	**604.7**	**795.3**	**1400.0**

Note: Values rounded to the nearest $0.1 million and so may not sum to totals.

The benefit cost ratio for surf lifesaving ...

Comparing the output value with the input value provides a benefit-cost ratio. That is, for every dollar expended on life saving, what is the value of lives and injuries avoided? This ratio can be calculated in two ways:

- if the imputed value of volunteer surf lifesavers' salaries (if salaries were paid) is included in the cost base then there is a cost-benefit ratio of 10.4; and
- if the imputed value of volunteer surf lifesavers' salaries is not included in the cost base (i.e. it is assumed that volunteers will remain unpaid and only the actual expenditure of clubs and governing bodies is included as a cost) the benefit-cost ratio is 16.5.

... is significant at between 10.4 and 16.5

In both cases the cost-benefit ratio is significantly positive and demonstrates the considerable net benefits directly achieved for the community from surf lifesaving.

The wider community impacts of surf lifesaving

The value of SLSA is broader than the direct impact

Measuring the value of volunteer surf lifesavers is not restricted to the cost of an employee, the value of a life saved, or the value of an injury avoided. To understand the full value of surf lifesaving in Australia we must also analyse the wider impacts that providing such a service has on the community.

Social capital is a measure of the broader community values ...

'Social capital' is an umbrella term used to describe the institutions, relationships, attitudes and values that govern interactions among people and contributes to economic and social development. Broadly speaking social capital is comprised of three components — norms, networks and trust.[3]

... and is enhanced by the activities of SLSA

Surf lifesaving contributes to all three components of social capital:

- to be effective, surf life saving clubs rely on norms including:
  - internal rules, systems and procedures for members and volunteers so that necessary activities are undertaken, and are undertaken in a safe manner; and
  - external rules, systems and procedures to ensure public safety (e.g. 'don't swim outside the flags');
- a strong and growing network, which links members and volunteers in a common purpose and so instils a sense of belonging; and
- considerable and ongoing community support and trust in the actions and responsibilities of volunteer lifesavers.

... with consequent benefits for ...

These factors generate spillover benefits for:

... people involved in surf lifesaving ...

- surf lifesaving volunteers and members, through:
  - improved personal health;
  - social participation;
  - education;
  - personal satisfaction; and

... and the broader community

- the community more generally, through:
  - increased valuable social networks;
  - decreased mortality;
  - increased economic performance;
  - decreased crime;
  - safe natural environment; and
  - increased tourism.

These benefits should not be overlooked

[3] Productivity Commission 2003, op. cit., pp. 9-11.

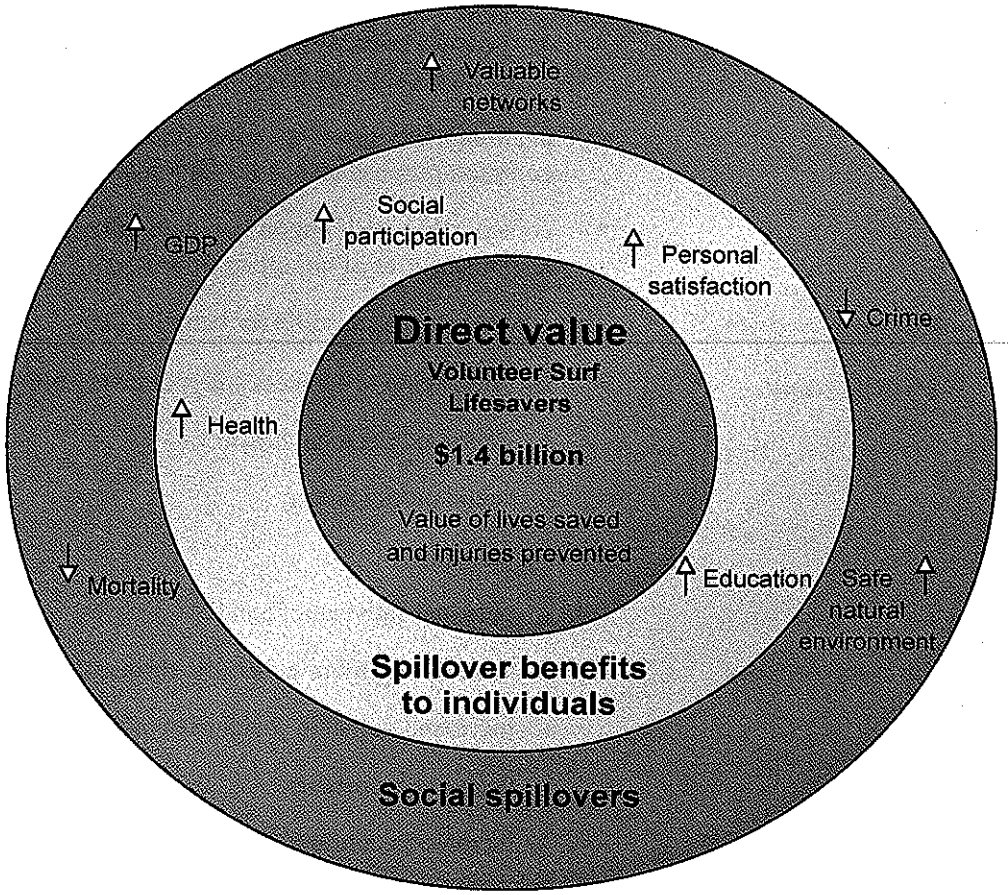
While these broader benefits are not readily quantifiable, they are nevertheless real and significant, and should not be forgotten when identifying the value of volunteer surf lifesaving.[4]

Summary — The total social and economic contribution of surf lifesaving

As shown in the figure below, the total value of surf lifesavers and lifesaving activities can be represented in three related bands:

- band 1 — the core dollar value of surf lifesavers ($1.4 billion in 2003-04);
- band 2 — tangible impacts on individuals who participate in volunteer surf lifesaving activities; and
- band 3 — social spillovers that effect the wider community as a result of the existence and operation of SLSA.

THE SOURCES OF ECONOMIC AND SOCIAL BENEFIT ATTRIBUTABLE TO SURF LIFESAVING IN AUSTRALIA



[4] P. Mayer 2003, *The Wider Economic Value of Social Capital and Volunteering in South Australia*, Office for Volunteers, Department of the Premier and Cabinet, Adelaide.

Chapter 1

An overview of Surf Life Saving Australia

This chapter provides a snapshot of the manner in which surf lifesaving activities are organised and undertaken by Surf Life Saving Australia.

Surf Life Saving Australia Limited (SLSA) is Australia's major water safety and rescue authority and aims to 'provide a safe beach and aquatic environment throughout Australia'.[5]

1.1 Institutional structure

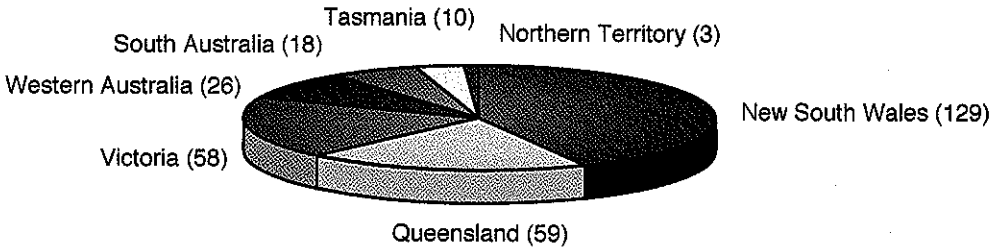
SLSA is a nation-wide organisation made up of several organisational tiers:

- National body (SLSA) — located in Sydney, includes the Australian Council, boards of management, lifesaving and development and surf sports. SLSA is the policy and decision-making body for surf lifesaving in Australia;
- state and territory surf lifesaving bodies — there is a governing body for all states and the Northern Territory. They have the coordination role for branches and clubs in their regions. The following organisations form the group of seven state/territory bodies:
  - Surf Life Saving New South Wales (SLSNSW);
  - Surf Life Saving Queensland (SLSQ);
  - Life Saving Victoria (LSV);
  - Surf Life Saving Western Australia (SLSWA);
  - Surf Life Saving South Australia (SLSSA);
  - Surf Life Saving Tasmania (SLST); and
  - Surf Life Saving Northern Territory (SLSNT);
- state branches — SLSNSW and SLSQ have regional branches (11 in New South Wales and 6 in Queensland) that assist in coordinating the large number of surf clubs in these states; and
- surf clubs — there are 303 surf life saving clubs across the country (see figure 1.1). They are a source of volunteers, volunteer beach patrols, junior education (nippers), surf sports competitions and fundraising.

[5] Surf Life Saving Australia 2004, *A New Vision for Surf Lifesaving: 2004 Surf Life Saving Australia Annual Report*, Sydney, p. 1.

Figure 1.1

STATE BREAKDOWN OF SURF LIFESAVING CLUBS

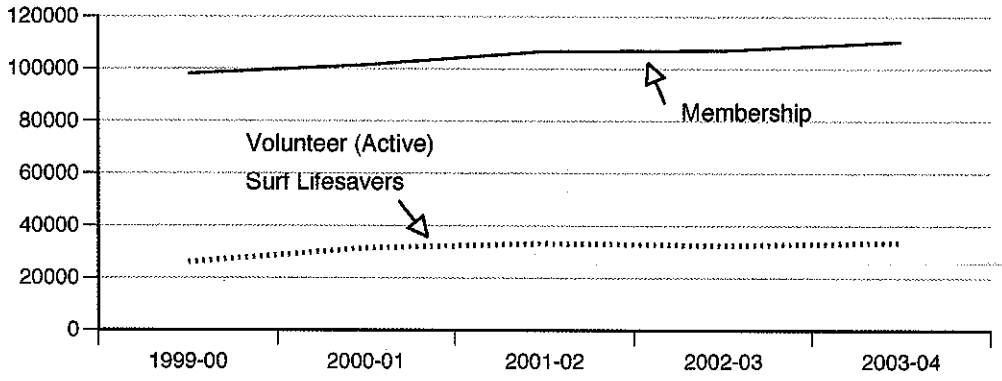


One of the key characteristics of SLSA is the number of volunteer members of the organisation.[6] As shown in figure 1.2, in the last five years SLSA has experienced:

- a 12.7 per cent increase in membership to over 110 000 members; and
- growth in volunteer active patrolling surf lifesavers of 29.4 per cent to 33 500 volunteers.

Figure 1.2

GROWTH IN MEMBERSHIPS AND VOLUNTEERS OVER THE LAST FIVE YEARS



This degree of volunteer support makes SLSA one of the largest volunteer organisations in Australia, and reflects the proportion of the population that live in coastal areas and Australia's defined beach culture.[7] In comparison, Red Cross Australia has 27 000 trained volunteers.[8]

1.2 Operational elements

SLSA is a diverse business, incorporating:

- surf lifesaving and water safety activities;
- surf sports competitions; and

[6] In most other parts of the world lifesaving services are fully funded by government.

[7] As a contrast, Surf Life Saving New Zealand (SLSNZ) has a similar organisation structure, with the majority of patrolling lifesavers being volunteers. However, SLSNZ has only 13 000 members over 71 surf clubs.

[8] Red Cross Australia 2004, Homepage, http://www.redcross.org.au, Accessed April 2004.

- research, education and training activities.

SLSA's major activities are outlined in more detail in the following sections.

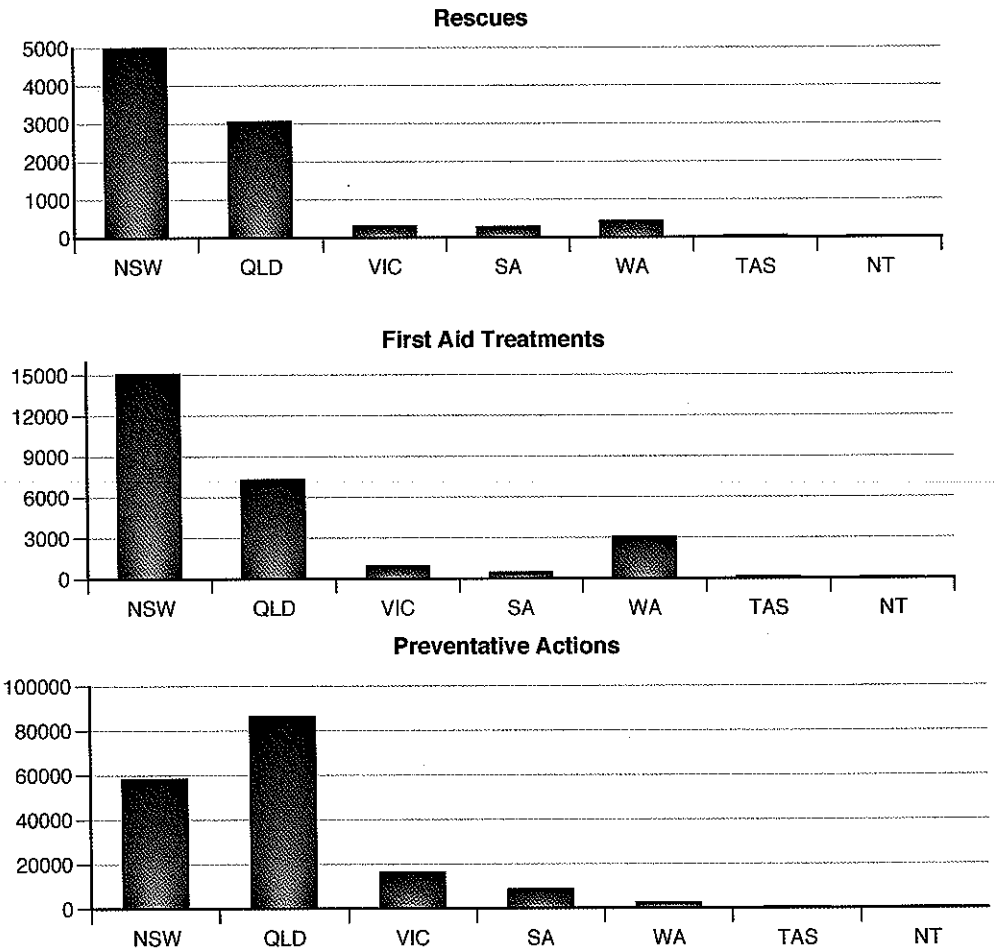
Surf lifesaving and water safety activities

There are 33 500 volunteer active surf lifesavers who are members of 303 surf life saving clubs patrolling over 300 beaches. Each of these surf lifesavers has been awarded their 'Bronze Medallion' or Surf Rescue Certificate, acknowledging their abilities in surf safety, awareness and rescue procedures.

As figure 1.3 shows, in 2003-04 volunteer surf lifesavers were responsible for over 9000 rescues, 26 000 first aid treatments and 172 000 preventative actions on Australian beaches.

Figure 1.3

SURF LIFESAVER ACTIONS BY JURISDICTION (2003-04)

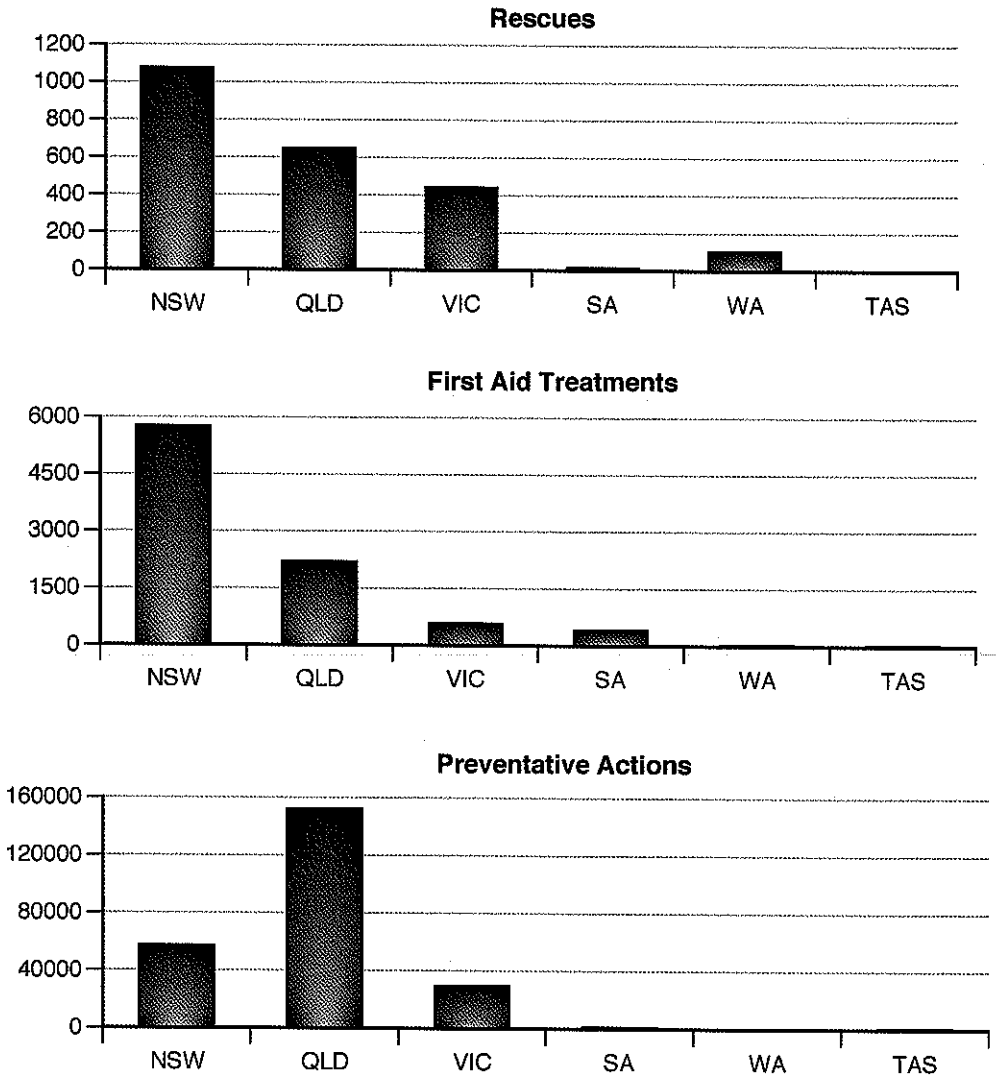


Source: Surf Life Saving Australia 2004, *A New Vision for Surf Lifesaving: 2004 Surf Life Saving Australia Annual Report*, Sydney, p. 1.

In addition, professional SLSA lifeguards are outsourced to many local councils, national parks and resorts.[9] There are 520 SLSA lifeguards who service 200 beaches, across the country. SLSA operates around 70 per cent of total lifeguard services through an entity called Australian Lifeguard Services. SLSA lifeguards differ from surf lifesavers as they are full-time employees of the local government or a private organisation. As figure 1.4 shows, in 2003-04 SLSA lifeguards were responsible for over 2000 rescues, 8000 first aid treatments and 239 000 preventative actions.

Figure 1.4

SLSA LIFEGUARD ACTIONS BY JURISDICTION (2003-04)



Source: Surf Life Saving Australia, unpublished data.

Research, education and training

SLSA undertakes many nation-wide education programs to increase surf safety knowledge and awareness among people of all ages:

[9] The Northern Territory do not have professional lifeguard services provided by SLSA.

- *Surf Survival*, *Surf Awareness*, *Surf Smart* and *Surf Safety* — these are programs where students learn basic surf survival and rescue skills and an understanding of the surf environment.
- *Bronze Medallion* — a training program that is a requirement for all surf lifesavers. The *Bronze Medallion* is the equivalent to a Certificate II in Aquatic Rescue, which falls under the Australian National Training Authority framework. This highlights the importance of rescue training among other training programs, such as first aid etc;
- junior surf education programs (*Nippers*) — these combine surf safety education and fun activities to provide children between the ages of 7 and 13 years with an optimal learning environment;
- *Telstra Beach to Bush Program* — this program takes the message of surf safety throughout Australia to those school-aged students who do not live close to a surf environment. In 2004 more than 40 000 primary school students were expected to have participated in this program;[10] and
- Community and tourist education programs — including airport visitor information services, visitor safety training for hotel staff and guided beach walks.[11]

All states and the Northern Territory also provide educational programs that complement SLSA's programs.

Surf sports competitions and social activities

SLSA undertakes many social activities, which vary in each surf club. On a national level SLSA coordinates the *Telstra School Surf League*, which is a combination of active sport and surf safety. With a focus on fun, friendship and skill development the program teaches students fundamental safety and surf skills, which are then displayed in an interschool competition.

Many sporting events are held by SLSA each year. The major event held by the national body is the NRMA Insurance Australian Surf Life Saving Championships. This event attracts 7348 competitors annually and is open to all from weekend enthusiasts to professional athletes. Each state and the Northern Territory also hold their own state championships.

There is also a major competition held in conjunction with Kellogg Australia for professional IronMen and IronWomen. The *Kellogg's Nutri-Grain IronMan and IronWoman series* are held in December and January, in which local and international athletes compete for the title of IronMan and IronWoman champions.

In addition to the state and regional championships, all states and the Northern Territory conduct local surf competitions.

[10] Surf Life Saving Australia 2004, Homepage, http://www.slsa.asn.au, Accessed January 2004.

[11] These programs currently operate in Queensland only.

Chapter 2

The direct value of volunteer surf lifesavers

This chapter outlines a number of alternative methods for measuring the direct value of surf lifesaving activities and highlights the merits of each of them.

There are two broad-based methods for determining the direct value of surf lifesavers:

- input based approach — this approach focuses on the time that surf lifesavers provide as volunteers and the resources used by surf lifesavers; and
- output based approach — this approach focuses on the benefits of the surf lifesaving services as measured by the likely cost to the public if this service was no longer provided.

Each of these methods are discussed below.

2.1 Input based approach

The value of volunteer surf lifesaving activities under the input based approach is calculated by the sum of the following:

- the value of volunteering time; and
- the expenditure by surf life saving clubs and governing bodies.

The value of volunteering time

To calculate the total value of volunteer activities it is necessary to take account of two elements:

- the time spent volunteering; and
- the imputed value of the time.

As a starting point, it is necessary to estimate the level of remuneration a paid employee would receive in a surf lifesaver's position. The level of remuneration can be set at a number of levels, however for the purposes of this report a generalised wage rate has been assumed.[12] In this case, the generalised wage rate is assumed to be the cost of replacing volunteer surf lifesavers with paid workers from the health and community services industry.[13]

The generalised wage rate was calculated by taking state and territory average hourly earnings for the health and community services industry.

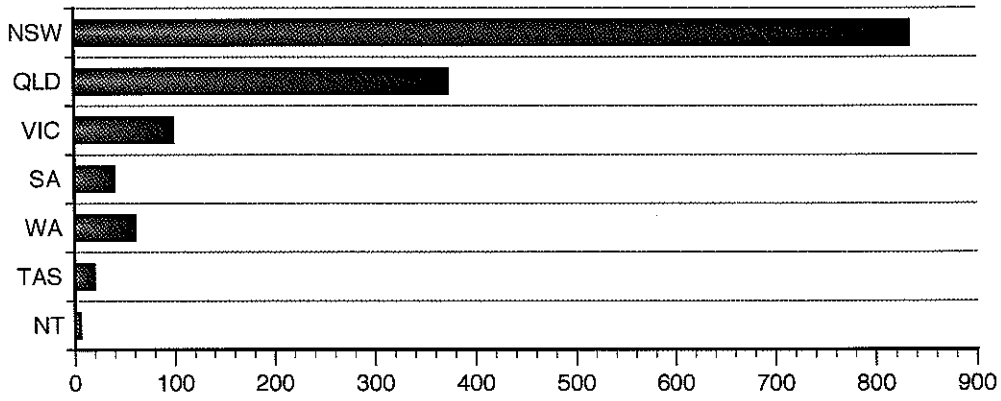
[12] D. Ironmonger 2002, *Valuing Volunteering – The Economic Value of Volunteering in South Australia*, Adelaide, p. 3.

[13] The lifeguard award wage has not been used as a basis for remuneration as it varies by lifeguard experience and by areas within a jurisdiction. While it is recognised that surf lifesavers require specific training, it is unclear the extent to which this training results in a wage above average weekly earnings for the health and community services industry.

State and territory bodies provided information on the number of volunteer surf lifesavers and the total number of patrol hours. Figure 2.1 summarises the number of patrol hours by jurisdiction in 2003-04.

Figure 2.1

NUMBER OF PATROL HOURS 2003-04 ('000)



A provision has also been included for travel to and from the surf life saving club for all volunteer surf lifesavers. Literature on evaluating the economic value of volunteers indicates that the value of travel should be set at 12.7 per cent of total foregone salary.[14]

Based on the above inputs the value of patrol hours for all jurisdictions, including provision for travel is $50.1 million. Table 2.1 lists the value of patrol hours for each jurisdiction.

Table 2.1

TOTAL VALUE OF PATROL HOURS ($ MILLION)

Jurisdiction	Value of patrol hours
NSW	29.4
Qld	12.3
Vic	4.2
SA	1.3
WA	2.1
Tas	0.7
NT	0.2
Total value of patrol hours	**50.1**

Note: Values rounded to the nearest $0.1 million and so may not sum to totals.

[14] D. Ironmonger 2000, *Measuring Volunteering in Economic Terms: Volunteers and Volunteering*, p. 70.

Expenditure by surf clubs and governing bodies

To estimate the full value of the input approach the expenditure of surf life saving clubs and governing bodies must also be captured.[15]

Expenditure highlights the economic contribution that the organisation put back into the economy through its operations in the period 2003-04.[16] The value of expenditure for all states and territories (including SLSA) is $84.7 million. Table 2.2 lists the total expenditures by jurisdiction.

Table 2.2

TOTAL EXPENDITURE OF SURF LIFE SAVING CLUBS AND GOVERNING BODIES ($MILLION)

Jurisdiction	Total expenditure
NSW	23.3
Qld	24.5
Vic	8.7
SA	2.6
WA	5.3
Tas	0.9
NT	0.5
Surf Life Saving Australia (including Surf Sports Australia Pty Ltd)	18.9
Total expenditure	**84.7**

Note: Values rounded to the nearest $0.1 million and so may not sum to totals.

Summary — total value using the input approach

The addition of the value of patrol hours and the expenditure by surf life saving clubs and governing bodies determine the total value of the input approach. The total input value for SLSA, including all states and territories is $134.8 million. Table 2.3 outlines the total value of the input approach by jurisdiction.

[15] Surf clubs, branches, state bodies and Surf Life Saving Australia provided the project team with information on expenditure for the period 2003-04. Where data was not available a simple extrapolation of data was undertaken.

[16] For the purposes of this report expenditure on Surf Life Saving helicopter services and jet boat services have not been included. Profit that flows from a surf club's hospitality business and is then expensed by the club is included in this value, as is the expenditure of Surf Sports Australia Pty Ltd, who operate the *Kelloggs Nutri-Grain IronMan and IronWoman series.*

Table 2.3

TOTAL INPUT APPROACH VALUE ($ MILLION)

Jurisdiction	Total input value
NSW	52.7
Qld	36.8
Vic	12.9
SA	3.9
WA	7.4
Tas	1.6
NT	0.7
Surf Life Saving Australia (including Surf Sports Australia Pty Ltd)	18.9
Total expenditure	**134.8**

Note: Values rounded to the nearest $0.1 million and so may not sum to totals.

2.2 Output based approach

Measuring the value of surf lifesaving activities using an output approach relies on valuing the lives saved and injuries avoided as a result of the actions of surf lifesavers. In order to calculate the output value the following information was required:

- the total number or drownings, permanent incapacitations and first aid treatments that would have resulted if a volunteer surf lifesaving service was not available; and
- the value of lives saved and injuries avoided.

Total number of drownings, permanent incapacitation and first aid treatments

For the purposes of calculating the value of lives saved, the total number of rescues is made up of:

- the number of rescues undertaken by volunteer surf lifesavers; and
- the number of preventative actions that, without the assistance of volunteer surf lifesavers would have resulted in the need for a rescue.

Preventative actions are defined as 'interceptions to prevent rescues or problems occurring'.[17] The definition of a preventative action is broad and includes tasks such as public address warnings and the placement of danger and rip current identification and warning signage. There is evidence that suggests that states and surf life saving clubs interpret preventative action activities in various ways.

[17] P. Fenner 1999, 'Prevention of drowning – Visual, scanning and attention span in lifeguards', *Journal of Occupational Health and Safety*, vol. 15, pp. 61-66.

Of these total rescues, four major activities would occur if volunteer surf lifesaving activities were no longer available:

- a drowning;
- a permanent incapacitating injury — for example a spinal cord injury or a serious injury that results in a coma;
- a minor injury or first aid treatment — for example a laceration or a broken arm that would require the assistance of a general practitioner if volunteer lifesavers were not able to assist in the first instance; and
- no injury or medical attention required — for example a family member or friend has performed the rescue or the individual was able to swim to safety.

Given the broad definition of preventative actions and possible different interpretations by different states and clubs, a conservative approach has been used and an assumption that 1 per cent of preventative actions would result in a rescue if lifesaving services were no longer available has been used.

The total number of rescues for each jurisdiction is outlined in table 2.4.

Table 2.4

TOTAL NUMBER OF RESCUES (INCLUDING A PROPORTION OF PREVENTATIVE ACTIONS)

Jurisdiction	Number of rescues
NSW	5560
Qld	3900
Vic	456
SA	354
WA	437
Tas	44
NT	13
Total rescues	**10 764**

Drawing upon an opinion survey of surf lifesaving experts (see appendix B), and similar experience in the United States,[18] it is estimated that if surf lifesaving services were not available:

- 5 per cent of total rescues would have resulted in a drowning;
- 3 per cent of total rescues would have resulted in a permanent incapacitation;
- 14 per cent of total rescues would have resulted in a minor injury or first aid treatment; and
- 78 per cent of total rescues would have resulted in no injury or rescue.[19]

[18] Centre for Disease Control 2001, *Lifeguard Effectiveness: a Report of the Working Group*, CDC.

[19] The breakdown of total rescues for each state and territory including sensitivity analysis is displayed in table A.1 of appendix A.

The value of lives saved and injuries avoided

There is a long-standing debate regarding the various methods of estimating the value of a life and the dollar estimates identified in different studies (see appendix B). For the purposes of this report, a conservative approach to valuing a life — the human capital approach — has been used, drawing on estimates developed by the Australian Institute of Criminology (AIC). Using the AIC framework, the value of a life in 2004 terms is $1.7 million.[20]

This methodology can be used to determine the value of a permanent incapacitation, except that the value of a permanent incapacitation will incur higher medical costs given the required hospitalisation and ongoing treatment. The value of a permanent incapacitation is estimated to be $1.8 million.

The cost of minor first aid treatments that would have been undertaken by volunteer surf lifesavers was valued at the current Medicare general practitioner subsidy rate of $30.9 per treatment.[21]

Summary of output approach

The product of the number of drownings, permanent incapacitations and first aid treatments and the value of these actions is the value of total surf lifesaving activities.

It is estimated that if surf lifesaving services were not available in 2003-04, there would have been:

- 485 drownings;
- 313 permanent incapacitations; and
- 1547 minor injuries or first aid treatments.

The total cost of SLSA's activities in terms of preventing:

- drownings is $831.7 million;
- permanent incapacitations is $568.3 million; and
- minor injuries and first aid treatments is $0.5 million.

The total value of lives saved and assisted in the base case is equal to $1.4 billion. This value can be expressed as a benefit of around $42 000 per volunteer surf lifesaver.

[20] P. Mayhew 2003, *Counting the Costs of Crime in Australia*, Australian Institute of Criminology, Canberra, pp. 2-3.

[21] Department of Health and Ageing 2004, *Medicare Benefits Schedule Book: Operating from 1 November 2004*, Canberra, p. 68.

Table 2.5

VALUE OF LIVES SAVED AND ASSISTED ($ MILLION)

	Drowning	Permanent incapacitation	Minor first aid	Total
NSW	429.6	293.6	<0.1	723.2
Qld	301.3	205.9	<0.1	507.3
Vic	35.3	24.1	<0.1	59.3
SA	27.3	18.7	<0.1	46.0
WA	33.8	23.1	<0.1	56.9
Tas	3.4	2.3	<0.1	5.8
NT	1.0	0.7	<0.1	1.6
Total	**831.7**	**568.3**	**<0.1**	**1400.0**

Note: Values rounded to the nearest $0.1 million and so may not sum to totals.

The total value of surf lifesaving in Australia can also be broken down on a metropolitan and non-metropolitan basis by state and territory. The metropolitan areas of Australia include Sydney, Melbourne, Perth, Adelaide, Gold Coast, Wollongong, Newcastle, Darwin and Geelong. All other areas of Australia that have surf life saving clubs are included in the non-metropolitan areas.

As shown in table 2.6, 46.1 per cent of lives saved and assisted are in metropolitan areas of Australia, equating to a total value $604.7 million. The non-metropolitan areas of the country make up 53.9 per cent of lives saved and assisted, equating to a total value of $795.3 million in 2003-04.[22]

Table 2.6

DISTRIBUTION OF BENEFITS FROM SURF LIFESAVING ($ MILLION)

	Metropolitan	Non-metropolitan	Total
NSW	312.4	410.8	723.2
Qld	219.1	288.2	507.3
Vic	25.6	33.7	59.3
SA	19.9	26.1	46.0
WA	24.6	32.3	56.9
Tas	2.5	3.3	5.8
NT	0.7	0.9	1.6
Total	**604.7**	**795.3**	**1400.0**

Note: Values rounded to the nearest $0.1 million and so may not sum to totals

[22] For a detailed breakdown of benefits including sensitivity analysis please see table B.1 of appendix B.

2.3 Summary of results

The total value of SLSA using the input based approach is $134.8 million. The input approach looks at costs of providing lifesaving services and the economic contribution by expenditure of surf clubs and governing bodies. However, the input approach alone does not consider any of the wider impacts of surf lifesaving in both social capital and cost of lives saved. Therefore we believe that the input based value is a conservative approach and the actual value of SLSA would be significantly greater.

The total value of SLSA using the output based approach is $1.4 billion. While it may seem to be a large value, the assumptions underpinning its calculation are conservative to give confidence in its credibility. The output approach can also be expressed as a benefit per volunteer surf lifesaver, equal to around $42 000 per lifesaver.

Comparing the output value with the input value provides a benefit-cost ratio. That is, for every dollar expended on surf lifesaving, what is the value of lives and injuries avoided? This ratio can be calculated in two ways:

- if the imputed value of salaries for volunteer surf lifesavers is included the total costs to the organisation are $134.8 million and the total benefits are $1.4 billion equating to a cost-benefit ratio of 10.4. The benefits of SLSA would have to decrease by 90 per cent to equal the costs, which would result in the prevention of only 79 drownings per year instead of the prevention of 485 drownings, 313 permanent incapacitations and 1547 minor injuries of first aid treatments; and
- if the imputed value of salaries for volunteer surf lifesavers is not included in the cost base (i.e. it is assumed that volunteers will remain unpaid and only the actual expenditure of clubs and governing bodies is included as a cost) then the total costs to the organisation are $84.7 million and the total benefits remain unchanged at $1.4 billion equating to a cost-benefit ratio of 16.5. The benefits of SLSA would have to decrease by 94 per cent to equal the costs, which would result in the prevention of only 49 drownings per year, which is significantly less that those actually achieved in 2003-04.

In both cases the cost-benefit ratio is significantly positive and demonstrates the considerable net benefits directly achieved in the community from surf lifesaving.

Chapter 3

Wider community impacts of surf lifesaving

This chapter provides an overview of the contribution that surf lifesaving activities make to social capital and the wider community.

To fully appreciate the contribution of surf lifesaving in Australia we must also identify the impact of providing such a service on the wider community.

Social capital is a well-documented indicator of an activity's broader benefit. Social capital is defined as:

> the institutions, the relationships, the attitudes and values that govern interactions among people and contribute to economics and social development...it includes the shared values and rules for social conduct expressed in personal relationships, trust, and a common sense of civic responsibility.[23]

Although it is difficult to measure all aspects of social capital in terms of a dollar-value, the nature of the impacts on the individual and the wider community can be identified. This, in addition to the core value of volunteer lifesavers will provide a robust estimate of the full value of life saving.

3.1 Key elements of social capital

The literature on social capital highlights three components — norms, networks and trust.[24]

Norms

Norms are shared understandings, conventions and informal rules that are usually unwritten but outline the way in which the community operates. Informal rules like 'swimming between the flags' and the concept that a lifesaver is an authority while patrolling a beach and should be obeyed are examples of norms in a surf lifesaving context. Also, the rules of the surf club for its members and volunteers are an example of norms within a community network.

Networks

Networks are a group of people with a common interest or who have a similar attribute. Families and friendship groups are considered networks as are sporting groups and clubs. It is possible to evaluate the success of SLSA through its current relative community participation and its success as a network.

Networks can span many different groups, but a common trait is that they are a group that is interconnected by people that share a similar attribute. Sporting clubs, religious groups, and volunteer groups like SLSA, the Red Cross and St Johns are all examples of community networks.

[23] Productivity Commission 2003, op. cit., p. 8.

[24] Ibid., pp. 9-12.

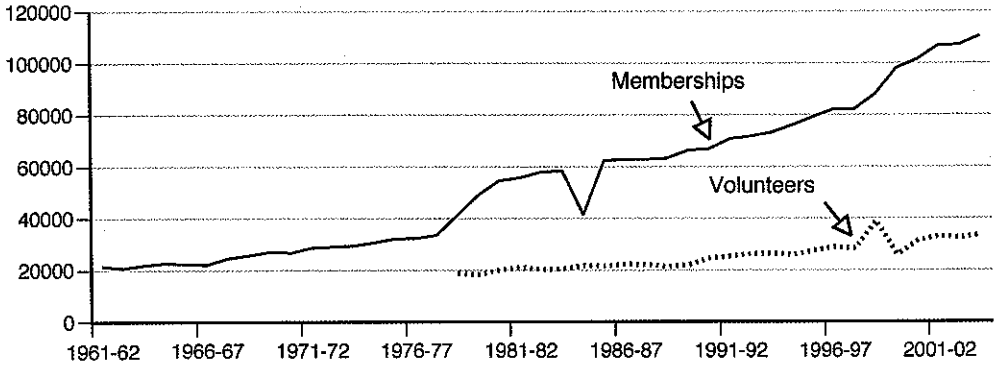
In a 2003 research paper, the Productivity Commission noted that:

> many traditional community organisations – including trade unions, the mainstream churches, scouts and guides, service clubs such as APEX and Lions, and the Country Women's Association – had experienced significant declines in memberships over the period from the 1960s to the 1990s. ABS surveys suggest that the level of participation in voluntary groups declined significantly between the early 1980s and the mid 1990s.[25]

In contrast to the organisations mentioned by the Productivity Commission that have experienced declining memberships, SLSA has experienced the opposite trend. Between 1961 and 1999, SLSA experienced growth in memberships of 350 per cent and growth in volunteers between 1978 and 1999 of 38 per cent. In the last five years SLSA has had continued growth of 12.7 per cent in memberships and 29.4 per cent in volunteer surf lifesavers.

Figure 3.1

GROWTH OF MEMBERSHIPS AND VOLUNTEERS OVER TIME



Source: SLSA data

Trust

Trust is confidence in others to act in a way that is expected within the community or the expectation that what others say is reliable and true.[26] For surf lifesaving this encapsulates the trust that volunteer surf lifesavers at the beach will save those beachgoers that run into danger and the trust that lifesavers will be patrolling the beach even if they are unpaid.

3.2 Particular benefits of social capital

The existence of strong social capital (ie. norms, networks and trust as a result of surf lifesaving) generates both direct and indirect benefits in several ways:

- individual benefits — for example, people who participate in social activities are more likely to be healthier and more educated;
- socio-economic spillovers — such as, a lower crime rate and a higher gross domestic product;
- educational benefits — by spreading knowledge and innovation;
- promoting cooperative behaviour; and

[25] Ibid., p. 30.

[26] Ibid., p. 11.

- reducing costs — in particular day-to-day business costs.[27]

For SLSA the most applicable components are the social impacts on individuals (individual benefits) and community/social spillovers.

Flow-on impacts for individuals

Individual benefits that are experienced by participating in activities, such as volunteer surf lifesaving include:

- improved personal health — studies indicate a link between social connectedness and health and personal well-being, including a decrease in the levels of suicide.[28] Social connectedness through a team ethic is a key characteristic of organisations like SLSA;
- social participation — participation in a social network is an important method in learning and practicing social and personal skills to people of all ages. The Productivity Commission has stated that longevity has a strong connection to participation in social networks. As mentioned above, SLSA is a network that has experienced strong growth in participation over time;
- education — there has been research on the strong correlation between the social capital involved in extra curricular student activities and educational performance.[29] Although this study was undertaken in the US it is most likely that similar results would hold true for Australia. SLSA not only provide extra curricular activities but also contribute to education through programs initiated by the organisation like *Surf Safety*, the *Nippers* program and the bronze medallion course; and
- personal satisfaction — there is also an element of well being and fulfilment that individuals gain by participating in volunteer organisations like SLSA.[30]

Social spillovers

The social spillovers that result from the activities of organisations such as Surf Life Saving Australia include:[31]

- increased valuable social networks — participating in volunteer activities increase the number of people involved in community-wide organisations. This benefit relates directly to the measurement of SLSA as a network and its success in both growth of memberships and volunteers over time;
- decreased mortality — studies have found there is a link between the level of social and community ties and memberships in voluntary groups and mortality rates. Decreased mortality also relates to the status of SLSA as a network and the growth of SLSA membership over time; [32]

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27 Ibid., pp. 15-20.

28 R. Putnam 1993, *Bowling Alone: The Collapse and Revival of American Community*, Touchstone, New York.

29 Ibid.

30 Productivity Commission 2003, op. cit., pp. 379.

31 Ibid., pp. 34–42.

32 J. House, C. Robbins, H. Metzner 1982, 'The association of social relationships and activities with mortality: Perspectives from the Tecumseh community health study', *American Journal of Epidemiology*, vol. 116, no. 1, pp. 123-140.

- increased economic performance — research involving cross-country comparisons indicates a correlation between trust and civic cooperation and gross domestic product (national output). In Australia the level of trust in organisations like SLSA and volunteer surf lifesavers to patrol beaches and save lives is high;

- decreased crime — there has been a lot of research on the correlation between crime and social capital. An Organisation for Economic Co-operation and Development study found that:

  even controlling for poverty and other factors that might encourage criminal behaviour, communities characterised by i) anonymity and limited acquaintance among residents; ii) unsupervised teenaged peer groups; and iii) low level of civic participation had an increased risk of crime and violence.[33]

  Surf lifesaving allows children and adults to be involved in an organisation that provides the opposite and beneficial side to each of the three components mentioned above (i.e. a community that is transparent and has high acquaintance among residents, supervised peer groups and a high level of civic participation reduces the risk of violence and crime);

- safe natural environment — the presence of surf lifesavers provides beachgoers with a feeling of safety while at the beach and encourages families and individuals to visit the beach; and

- increased tourism — SLSA provides a safe beach environment, which makes Australian beaches more attractive to tourists. There is no quantifiable value for the contribution that surf lifesaving has on tourism, however the numerous awards for tourism excellence and the use of surf lifesavers for the purpose of promoting Australia as a tourist destination captures these intangible benefits.

[33] Organisation for Economic Co-operation and Development 2001, *The Well-being of Nations: The Role of Human and Social Capital*, OECD, Paris, p. 54.

Appendix A

Rescue statistics

Table A.1

TOTAL RESCUES – BREAKDOWN BY STATE/TERRITORY AND SCENARIO

State/Territory	Base case				Sensitivity test 1				Sensitivity test 2			
	Drowning	Perm incap	Minor injury	No injury	Drowning	Perm incap	Minor injury	No injury	Drowning	Perm incap	Minor injury	No injury
NSW	251	162	799	4349	224	145	715	3894	277	179	882	4803
Qld	176	113	560	3050	137	88	437	2376	215	139	684	3724
Vic	21	13	66	357	13	9	42	231	28	18	89	483
SA	16	10	51	277	12	8	39	211	20	13	63	342
WA	20	13	63	342	19	12	59	323	21	13	66	361
Tas	2	1	6	35	2	1	6	31	2	1	7	39
NT	1	0	2	10	0	0	1	8	1	0	2	12
Total	**485**	**313**	**1547**	**8418**	**408**	**263**	**1300**	**7073**	**563**	**363**	**1794**	**9763**

Appendix B

The output based approach methodology

B.1 Quantifying surf lifesaver services

There has been some literature in recent years that has focussed on the effectiveness of lifesavers. The United States Centre for Disease Control (CDC) completed a report in 2001 that attributed a proportion of rescues that would have resulted in a drowning if lifeguard services were no longer provided.[34] The CDC presented six sensitivity levels to assess the total cost of lifeguards in the US, ranging from 1 per cent and 36 per cent of rescues resulting in death. However, the above research does not delve into the number of rescues that result in permanent incapacitation or minor injury or first aid treatments.

In a report that preceded the CDC evaluation of lifeguard effectiveness, the American Institutes for Research undertook a job analysis of lifeguards. In order to analyse the number of rescues that would result in a drowning if lifeguard services were no longer available, the institute undertook a survey completed by water safety experts.[35]

Similarly, for the purposes of this report opinions were sought from Surf Life Saving Australia (SLSA) representatives in each state and territory to determine a proportion of total rescues that would result in a drowning, permanent incapacitation, minor injury and first aid treatments and no injury.

Participants were selected on the basis of experience to make an informed judgement on the questions posed.

The group of Subject Matter Experts (SMEs) were also asked to estimate the number of preventative actions that would result in a rescue if surf lifesaving services were no longer available. Given that the definition of a preventative action is broad, states and clubs may interpret the definition differently. A conservative assumption of 1 per cent of preventative actions would result in a rescue if surf lifesaving services were no longer available has been assumed.

B.2 Value of a life

The value of a life is generally determined by either a 'willingness-to-pay' approach or a 'human capital' approach. Each approach has differing strengths and weaknesses, which are discussed in more detail in box B.1.

[34] Centre for Disease Control 2001, *Lifeguard Effectiveness: a Report of the Working Group*, CDC.

[35] American Institutes for Research 1998, *A Work Behaviour-oriented Job Analysis for Lifeguards*, AIR, Washington.

Box B.1

ALTERNATIVE APPROACHES TO IDENTIFYING THE VALUE OF LIFE

There are two main approaches to quantifying the value of life:

- the human capital approach — this approach considers the value of lost productivity as a result of disability and premature death, using lost earnings as a surrogate for the impact that premature death and disability have on individuals and society;
- the willingness-to-pay approach — this approach considers the amount people are willing to pay to keep people alive and healthy

The main criticism of the human capital approach is that it fails to recognise pain and suffering and the psychosocial consequences of illness. As a result, human capital values are generally significantly lower than willingness-to-pay values. Furthermore, earnings do not always accurately reflect one's ability to produce, and some groups are thus undervalued (e.g. women, the young and the elderly).

The willingness-to-pay approach is favoured by many economists on the grounds that the human capital approach does not account for consumer behaviour in purchasing goods and services. For example, preserving the life of an elderly person with no future economic productivity may be a decision for which a family or society is willing to pay.

Despite this conceptual attraction, the willingness-to-pay approach can be criticised because:

- it is extremely difficult to place a value on small reductions in the probability of death. As a result, valuations van vary significantly from estimate to estimate; and
- it values individual lives based on income distribution, and so may have some distributional bias as the rich are more able to pay than the poor.

A particular problem with reliance on the willingness-to-pay approach is that there are so few Australian willingness-to-pay studies and, where they exist, there is wide variability in the values of life derived. While some analyses seek to compensate for these inadequacies by using overseas estimates as complements this is a flawed approach because there is no guarantee that overseas willingness-to-pay estimates will reflect domestic willingness-to-pay.

As a result, the human capital approach to the value of life 'is used most often in cost-benefit and cost-effectiveness analyses because of the availability of reliable statistics, the relative simplicity of calculations and the consistency of results'. For example, when considering the costs of workplace death (and injury) in the separate inquiries over the past decade, the Industry Commission/Productivity Commission has consistently employed a human capital approach in preference to a willingness-to-pay approach.

Source: Public Health Agency of Canada 1997, *Economic Burden of Illness in Canada, 1993*, Minister of Public Works and Government Services.

Given the observations in box B.1, a human capital approach has been used in this case, with an estimated value of a life in 2004 terms of $1.7 million and the value of a permanent incapacitation of $1.8 million.[36]

This is comparable to the value of a life estimated by the New South Wales Injury Risk Management Research Centre (IRMRC). The IRMRC value the loss of output component of a life lost at $909 000 in 1998-99 terms.[37] The Australian Institute of Criminology values the loss of output component at $1.2 million in 2001 terms.

B.3 Sensitivity analysis

Given the sensitivity the number of preventative actions has on the total result due to its large number in comparison to rescues two sensitivity tests were conducted:

[36] P. Mayhew 2003, *op. cit.*, pp. 2-3.

[37] New South Wales Injury Risk Management Research Centre 2003, *Injury Costs: A Valuation of the Burden of Injury in New South Wales 1998-1999*, University of New South Wales, Sydney, p. 19.

- Sensitivity test 1 — assume nil preventative actions would result in the requirement for a rescue if lifesaving services were no longer available;[38] and
- Sensitivity test 2 — assume 2 per cent of preventative actions would result in the requirement for a rescue if lifesaving services were no longer available.[39]

The result of the base case and the sensitivity tests are shown in table B.1 (next page)

The three scenarios (i.e. the base case and the two sensitivity tests) serve as a basis to determine the number of preventative actions that would result in a rescue if lifesaving services were no longer available. The weighted average results of the opinion survey were used to determine the number of rescues that would have resulted in a drowning, permanent incapacitation, minor injury or first aid treatment and no injury if lifesaving services were no longer available.

[38] In 2003-04 there were 172 000 preventative actions. Under this sensitivity test, none of these preventative actions would result in a rescue (i.e. the preventative actions are undertaken for the safety of others but no lives would be saved).

[39] In 2003-04 there were 172 000 preventative actions. Under this sensitivity test, 2 per cent of these preventative actions would result in a rescue (i.e. the preventative actions are undertaken for the safety of others but only a small proportion of lives would be saved).

Table B.1

BASE CASE AND SENSITIVITY TESTS BY STATE AND TERRITORY — METROPOLITAN/NON-METROPOLITAN ($ MILLION)

State/ Territory	Base case (1% preventative actions)			Sensitivity test 1 (nil preventative actions)			Sensitivity test 2 (2% preventative actions)		
	Metropolitan	Non-metropolitan	Total	Metropolitan	Non-metropolitan	Total	Metropolitan	Non-metropolitan	Total
NSW	312.4	410.8	723.2	298.8	348.8	647.6	368.5	430.3	798.8
Qld	219.1	288.2	507.3	182.3	212.9	395.2	285.7	333.6	619.4
Vic	25.6	33.7	59.3	17.7	20.7	38.4	37.1	43.3	80.3
SA	19.9	26.1	46.0	16.2	19.0	35.1	26.2	30.6	56.9
WA	24.6	32.3	56.9	24.8	28.9	53.7	27.7	32.3	60.0
Tas	2.5	3.3	5.8	2.3	2.7	5.1	3.0	3.5	6.5
NT	0.7	0.9	1.6	0.6	0.7	1.3	0.9	1.1	2.0
Total	**604.7**	**795.3**	**1400.0**	**542.7**	**633.7**	**1176.4**	**749.1**	**874.6**	**1623.8**

Note: Values rounded to the nearest $0.1 million and so may not sum to totals