


Submission No: 57
Date Received: 4-6-08
Secretary: 



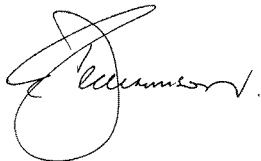
Surf Life Saving Australia

Submission to

House of Representatives

Inquiry into climate change and environmental impacts on coastal communities

Submission Prepared by



Brett Williamson OAM
Chief Executive Officer
and

Norman Farmer ESM
National Manager Coastal Safety Services

Surf Life Saving Australia
ABN: 67 449 738 159
1 Notts Avenue
Bondi Beach NSW 2026
Tel: 02 9300 4000
Web: www.slsa.com.au

30 May 2008



Surf Life Saving Australia

Submission to House of Representatives Standing Committee on Climate Change, Water, Environment and the Arts Inquiry into climate change and environmental impacts on coastal communities

EXECUTIVE SUMMARY

Surf Life Saving Australia appreciates the opportunity to provide information to the House of Representatives Standing Committee on Climate Change, Water, Environment and the Arts inquiry into climate change and environmental impacts on coastal communities.

This submission addresses two of the terms of reference of the inquiry; the impact of climate change on coastal communities and strategies to deal with climate change adaptation, particularly in response to projected sea level rise, and mechanisms to promote sustainable coastal communities.

This submission gives particular regard to human safety.

Surf Life Saving Australia presents the following recommendations for the Committee's consideration:

1. Where access to the coastline is encouraged through the provision of a built environment (e.g. paved roads, car parks and amenities such as picnic and ablution facilities etc.) considerations of public safety should be addressed through regular risk assessments and programs such as public awareness, education, information, and lifesaving services.
2. Access to certain parts of the coastline should not be encouraged or provided through the provision of a built environment (e.g. paved roads, car parks, picnic and ablution facilities etc) due to the coastal hazards and remoteness that may result in unacceptable risks to users whether passive or active. This is a dynamic process due to weather events.
3. Governments with coastal jurisdictions must ensure public safety considerations are addressed through structured risk management where public access to beaches is provided, readily available or encouraged
4. Urban residential water developments on the coastline (e.g. canal estates) should not be developed if they risk changing natural systems, processes and hydrology, create inundation, pose a risk to residents and visitors, or risk infrastructure integrity through climate change.
5. Lifesaving infrastructure changes and enhancements will need to:
 - a. keep pace with population growth, trends and shifts;
 - b. be cognisant of the changing impacts of climate change;
 - c. remain consistent with community expectations, and
 - d. provide ready access to beaches for lifesaving equipment such as Inflatable Rescue Boats (IRBs), Rescue Water Craft and Beach Rescue Vehicles (e.g. All Terrain Vehicles)
6. Consideration will need to be given by coastal planners and managers for expansion of special lifesaving and support services such as lifesaving command and communication centres, helicopter search and rescue, special water craft launch and/or mooring facilities and the like. This may include special permits for crown land use.

7. The governments of Australia (Federal, State and Local) recognise the value of SLSA's coastal safety services to coastal communities and visitors and ensure SLSA's ongoing involvement in planning, decision making, infrastructure provision and appropriate levels of support funding.
8. The governments should recognise the extensive network of SLSA surf clubs, lifeguards and operations support services and the role it can play in not only providing safety services, but in monitoring visually and physically the changing conditions of Australia's beaches and coastline.
9. Community and visitor safety on Australia's coast and beaches must be integral to any coastal policy, strategies and coastal management plans whether or not they are linked to climate change.

This can be achieved by engaging SLSA and its constituent groups in the State operations and the surf lifesaving clubs.

The involvement of SLSA should not be an after thought, but be absolute from the beginning of any planning phase through to implementation, monitoring and review.

10. SLSA coastal risk assessments, or equivalents, should be conducted on all coastal areas to which people have ready access; the priorities for which should be determined by a range of factors including population demographics, access and beach hazards.
11. The Council of Australian Governments should recognise the extensive SLSA network and take appropriate steps, both organisationally and fiscally, to integrate the SLSA network into emergency services preparedness, planning, and response systems and activities.
12. The use of technology is important to aid research into coastal changes resulting from the impacts of climate change.
13. The provision of funding, initial and ongoing, to provide regularly updated data on and visual surveillance of each of Australia's 500 most attended beaches, including those with a lifesaving service, will not only enhance safety provision but will provide a visual history of changing coastal conditions.
14. SLSA should receive the support of all levels of government, industry and local corporate support to introduce positive environmental initiatives such as renewable energy, recycling, water consumption minimisation, green clubhouses and marine and coastal care programs across Australia and which can be shared with other community organisations, in particular those who are situated in the coastal zone.
15. Coastal education programs should have safety education (water safety, CPR, rescue and the like) integral to ensure the coastal activities are undertaken with safety of participants

INTRODUCTION

Surf Life Saving Australia appreciates the opportunity to provide information to the House of Representatives Standing Committee on Climate Change, Water, Environment and the Arts inquiry into climate change and environmental impacts on coastal communities.

This submission would like to address the following terms of reference of the inquiry.

- The impact of climate change on coastal areas and strategies to deal with climate change adaptation, particularly in response to projected sea level rise
- Mechanisms to promote sustainable coastal communities

This submission presents the SLSA view, position and issues arising from climate change and environmental pressures experienced by Australian coastal areas with particular regard to human safety.

BACKGROUND

Over 85%ⁱ of Australians live near the coast, and our tourist beaches alone receive an estimated 55 million visitations every year. The vast coastline of Australia covers more than 35,877kms and when including all islands this increases to 59,736kmsⁱⁱ. The coastal beaches while a magnet for living and visiting also have inherent and largely unpredictable risk.

In the past 100 years Surf Life Saving Australia (SLSA) has saved over 530,000 lives at Australia's beaches and continues to rescue more than 11,000 people every yearⁱⁱⁱ. Tragically, each year more than 80^{iv} lives are lost and many hundreds of people suffer injuries – from minor incidents to serious trauma in accidents relating to our coast.

Of the 11,748 beaches now identified by the Australian Beach Safety and Management Program (ABSAMP), only approximately 3% (350) have a lifesaving service provided by the lifesaving clubs affiliated with SLSA and patrolled by lifeguard services provided by SLSA and local governments across Australia.

In the 1970s, SLSA realised that it needed to do more to protect human life along Australia's coastline. In the years since then a range of lifesaving support services such as rescue helicopters, jet rescue boats, off-shore rescue boats and more recently rescue water craft (PWCs otherwise known as jet skis or waverunners) have been introduced to complement the extensive beach based volunteer lifesaving service. However, despite these lifesaving and support services, people continue to drown along Australia's coastline and outside the traditional lifesaver patrolled areas; the red and yellow flags.

In the mid 1990s, and prior to the formation of the Australian Water Safety Council in 1998^v, SLSA adopted the principles of risk management and created an aquatic safety and risk assessment program. In 2005, and to address recommendations 13 and 19 of the National Water Safety Plan 2004-2007^{vi}, SLSA developed an initiative called Australian CoastSafe.

The National Water Safety Plan suggested that "to ensure the safety of people who visit these locations (aquatic locations), a range of strategies is required". Further, "this plan provides the basis for managing risk at aquatic locations through a range of standards, legislation and management strategies and through the provision of surveillance and rescue services". SLSA adopted a number of the plans' recommendations.

It is through the use of these risk management principles and systems that the impact of climate change on Australia's coastline will be monitored and managed into the future.

TERMS OF REFERENCE

1. The impact of climate change on coastal areas and strategies to deal with climate change adaptation, particularly in response to projected sea level rise

The impacts of climate change and sea level rise will progressively impact the coast and beaches with changing risks and conditions such as previously known hazards further under water and changing wave patterns.

Therefore governments and coastal management agencies will need to implement coastal monitoring, preparedness and responsive programs to ensure communities are able to make plans in advance of change, and to respond rapidly to coastal changes resulting from extreme weather events.

The greatest impacts will be from natural disaster events such as storms and associated inundation from flooding from coastal rains, storm surges and in some cases the combined affects.

1.1 Access to the coast; climate change and safety

There is a clear relationship between access to the coast, its beaches and human safety.

Accessibility to the coast provides a broad range of recreational, health and social benefits. However if access is not planned and managed the result could be an unfortunate incident impacting on a person's health, or worse still, death.

Access to and use of beaches for recreation will be impacted by ongoing extreme weather events. Beach hazards will change and will pose a greater risk of injury unless monitored, mapped and communicated.

Restriction of access is one risk mitigation strategy however there are a range of others that may be considered in particular where access has become a right, privilege or tradition due to recreation activities of fishing, swimming, surfing and the like. In these instances risk mitigation strategies could include the provision of appropriate signage, public rescue equipment, public education and tourism information.

The right of access may need to be reviewed due to changing coastal conditions resulting from climate change. Access to beaches in close proximity, on or under unstable cliffs will pose a hazard. For example, there are many who will remember the 1996 Gracetown cliff collapse where five adults and four children were crushed to death on Huzza's Beach in Western Australia's south-west while watching an inter-school surfing competition in September 1996. Tragically, a limestone overhang they were sheltering under collapsed, burying them under more than 1000 tonnes of rubble.

There may need to be more regular inspections of coastal beaches and paths to ensure hazards are identified and addressed to minimise risk of injury or death.

1.2 Impacts of climate change on coastal safety; infrastructure

The location of some infrastructure may be vulnerable to such events and may need to be re-engineered or relocated. For example in June 2007, a storm event impacted the coastline in Eastern Victoria such that part of the Seaspray Surf Life Saving Club was damaged.



Fig 1. Seaspray Surf Life Saving Club, Victoria; June 2007 (courtesy Life Saving Victoria)

The location of housing (existing and new) may need to be reviewed in light of impacts from storm events.

Periodic inspections may need to be carried out by engineers to ensure the stability of cliff faces and housing to ensure safety of the residents, coastal users and also emergency services workers who may be called upon to respond to emergencies.

For example, the housing at Ben Buckler at Sydney's famous Bondi Beach may be at risk if the frequency and severity of storm events continues to impact the integrity of the land.



Fig 2. Cliff top housing at Ben Buckler, Bondi Beach, NSW (courtesy of air view on-line)

1.3 Coastal dependent uses and users

Coast dependent uses, and their associated infrastructure, include boat ramps, surf clubs, yacht clubs, boathouses, ports and harbours. They give people access to the coast and should reflect safety, recreation and industry needs.

1.3.1 New methods for traditional coast dependent uses and users

The impacts of climate change will lead to land managers reviewing planning, development and operation of traditional coast dependent uses and users.

For example, urban residential water developments (e.g. Canal estates) have become popular since the 1960s with many States having developments on coastal waterways, some of which will be prone to inundation due to catchment based flooding and/or storm surges. Very few are protected using flood gates or locks.



Fig 3. Canal estate with flood protection – Patterson Lakes, Victoria (Photo by N Farmer)

The residents of and visitors to these estates are vulnerable during times of extreme weather events and sea level rise. Therefore associated developers and managers should involve aquatic safety organisations such as SLSA in emergency planning and response scenarios.

1.3.2 Lifesaving services – ongoing need

The lifesaving services provided by SLSA and local government authorities along the Australian coastline are well known the world over. They contribute to the recreational experience of beach goers, whether from the local communities, across Australia or overseas.

These lifesaving services will need to continue into the future irrespective of the impacts of climate change. The duration and seasonality of the services may need to be modified as may the locations at which they are provided due to changing population trends.

1.4 Recommendations

It is therefore the position of Surf Life Saving Australia (SLSA) that:

1. Where access to the coastline is encouraged through the provision of a built environment (e.g. paved roads, car parks and amenities such as picnic and ablution facilities etc.) considerations of public safety should be addressed through regular risk assessments and programs such as public awareness, education, information, and lifesaving services.

2. Access to certain parts of the coastline should not be encouraged or provided through the provision of a built environment (e.g. paved roads, car parks, picnic and ablution facilities etc) due to the coastal hazards and remoteness that may result in unacceptable risks to users whether passive or active. This is a dynamic process due to weather events.
3. Governments with coastal jurisdictions must ensure public safety considerations are addressed through structured risk management where public access to beaches is provided, readily available or encouraged
4. Urban residential water developments on the coastline (e.g. canal estates) should not be developed if they risk changing natural systems, processes and hydrology, create inundation, pose a risk to residents and visitors, or risk infrastructure integrity through climate change.
5. Lifesaving infrastructure changes and enhancements will need to:
 - a. keep pace with population growth, trends and shifts;
 - b. be cognisant of the changing impacts of climate change;
 - c. remain consistent with community expectations, and
 - d. provide ready access to beaches for lifesaving equipment such as Inflatable Rescue Boats (IRBs), Rescue Water Craft and Beach Rescue Vehicles (e.g. All Terrain Vehicles)
6. Consideration will need to be given by coastal planners and managers for expansion of special lifesaving and support services such as lifesaving command and communication centres, helicopter search and rescue, special water craft launch and/or mooring facilities and the like. This may include special permits for crown land use.

2. Mechanisms to promote sustainable coastal communities

2.1 Coastal population growth and safety

Coastal population growth is providing challenges for coastal zone management authorities on a number of fronts including infrastructure and basic services.

Similarly, this growth is providing challenges to coastal safety organisations including Surf Life Saving Australia (SLSA). These challenges include:

- Dealing with more people on the coast who lack knowledge and understanding of coastal water conditions such as rip currents
- Maintaining ageing lifesaving service infrastructure, in particular lifesaving buildings
- Creation of new lifesaving services along the traditional volunteer lines
- Finding active volunteers amongst a number of the ageing coastal communities
- Keeping up with the pace of change in community expectations on volunteer management and administration including occupational health and safety
- Sourcing initial and ongoing funding for purchase, maintenance and replacement of lifesaving equipment, craft and vehicles

SLSA has already diversified its operations in an attempt to address some of these challenges including introduction of the Australian Lifeguard Service, Australia's largest paid lifesaving service which provides complementary services to the volunteers during the working week and in areas where sufficient volunteers are unavailable to provide a necessary service.

2.2 Human safety and coastal zone management

Management of the coastal zone requires many considerations and inputs. Many coastal policies, strategies and plans give due to consideration to the coastal environment, the ecology, biology, geomorphology and the impacts of human use. However few have researched or given reasonable consideration to human safety.

The environmental impacts on coastal communities resulting from climate change will affect human health, safety and well being.

The vulnerability of many coastal communities to rising sea levels resulting from the cumulative effects of sea level rise, storm surges and flood events will not only result in environmental impacts to coastal communities but also social and economic.

The human safety in the coastal zone can be managed with improved programs such as coastal risk management and coastal monitoring.

2.3 Coastal risk management

Any coastal management plan should include risk management policies and practices.

Risk assessments provide an important tool for identifying hazards and risk control measures and should be conducted on all coastal areas where people reside, have access or recreate. The assessments should take into consideration current and future vulnerability and associated risks.

Recommendation 19 of the National Water Safety Plan 2004 to 2007 states “that Risk and Safety Audits be conducted and Risk Management Plans be prepared and implemented at all regularly used aquatic locations - beaches, pools, inland swimming holes.”

Surf Life Saving Australia (SLSA) has been providing coastal risk assessments across Australia for more than 10 years and in that time more than 200 risk assessments have been completed on coastal beaches, in estuaries, on tropical islands and along coastal trails. This has provided SLSA with a greater insight into and understanding of coastal safety “beyond the flags”.

Importantly, coastal risk assessment should be based on risk management principles as provided in relevant standards such as AS 4360 Risk Management, and supported by best practice guidelines such as the Australian Coastal Public Safety Guidelines and the National Aquatic and Recreational Signage Style Manual (3rd Edition), both of which provide valuable guidance on introducing coastal risk mitigation and control measures.

Recently, SLSA completed an extensive review into its risk assessment resources, tools and training to ensure it reflects current best practice and new standards. The enhanced aquatic safety and risk assessment program now includes a range of inputs in determining the risk of a particular beach or coastal area. These inputs include:

- Population
- Visitations
- At risk groups; e.g. new arrivals, tourists
- Beach hazard ratings
- Human activity and interaction
- Coastal access
- Incidents
- Hazards and risks

At present the coastal risk assessments are being completed in an ad hoc manner across Australia based on the propensity of the relevant coastal management authority to complete assessments or to pay for specialist organisations such as SLSA. There are those who are reluctant to complete these risk assessments for fear of the action they may need to take as a result; seemingly working on a principle of “what I don’t know won’t hurt me”.

2.4 Surf Life Saving Australia lifesaving service network

SLSA has an extensive network of 305 volunteer lifesaving services, a 50 support services that includes rescue helicopters and jet rescue boats and a further 66 lifesaving services through its Australian Lifeguard Service network across Australia that currently provides a comprehensive lifesaving service along many thousands of kilometres of Australia’s vast coastline.

There are a number of opportunities for this extensive network to be engaged in coastal zone management and monitoring, emergency preparedness, response and care. For example:

- a. The SLSA network already provides education and training opportunities for its lifesavers, the local communities in which they are located, and at many schools across Australia; coastal and inland.
- b. The SLSA network provides extensive capabilities through its trained lifesaver community and the associated first aid and rescue equipment to not only provide

beach based prevention and rescue services, but also respond to emergencies whether from the sea or the land.

However, the integration of this network into governmental emergency service networks is ad hoc in some areas and non-existent in others.

The integration of the SLSA network into emergency services system in States and across Australia will enhance Australia's capacities and capabilities in responding to domestic and international disasters.

2.5 Coastal monitoring programs

SLSA has extensive experience in coastal and beach safety and is in a unique position to provide a data, structure and system to aid the Australian Government with an extensive coastal monitoring tool through visual and on-site reporting capabilities.

2.5.1 The Australian Beach Safety and Management Program - ABSAMP

Surf Life Saving Australia has completed an extensive mapping of all known beaches in Australia, which to date number 11,748, each of which has been given a modal beach hazard rating.

The Australian Beach Safety and Management Program (ABSAMP) was formally established in 1990 as a joint program between Surf Life Saving Australia and the University of Sydney Coastal Studies Unit. ABSAMP is an ambitious project that is the most comprehensive study ever undertaken on the beaches of any part of the world's coast. The main aims of the program include:

1. develop a comprehensive, standardised and scientific information base on all Australian beaches with regard to their location, physical characteristics, access, facilities, usage, rescues, physical and biological hazards, and level of public risk under various wave, tide and weather conditions.
2. expand and improve the management and safety services of all Australian beaches.

ABSAMP is based on integration of a scientific understanding of beaches, their hazards and usage, together with the expertise in beach safety management and resources of SLSA, utilising the latest technology for data management and analysis.

ABSAMP is an SQL database that allows accredited users access to the beach information either via a viewable screen via a web browser or via output using the reporting function. The data is setup with the beach as the central hub and all other information attached to it. Each beach has a unique key identifier as have all of the attached features.

The program has already had wide application and impact on the management of Australian beach systems, and will play an increasing role in their management, particularly as growing coastal development, population and tourism all demand accessible, yet safe, beaches for public recreation and tourism.

Fig 4 depicts one of the many database page layouts, on this occasion the beach photograph listing.

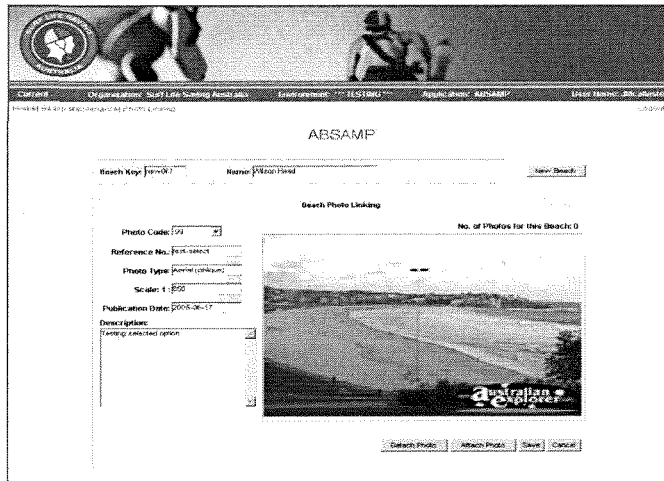


Fig 4. Australian Beach Safety and Management Program – SQL data base view

As an example, SLSA is using ABSAMP in its work with the Department of Climate Change in their National Vulnerability (to climate change) Assessment of the Australian coast and priority coastal systems, and the University of Tasmania through its School of Geography and Environmental Studies (Spatial Science) for the Smartline^{vii} mapping within the National Shoreline Geomorphic and Stability Mapping Project. The 'Smartline' is a nationally-consistent coastal GIS map in the form of a segmented line. This data enables an assessment of the sensitivity of the coast to the potential impacts of climate change and sea level rise.

The SQL database technology is also allowing SLSA information integration with a range of client software applications such as GIS that will enable local government authorities, for example, to import to and manipulate the information in their mapping and work flow management tools.

2.5.2 Coastal video surveillance and monitoring

SLSA has partnered with Coastalwatch to install visual surveillance on surf clubs and other lifesaving facilities. Over the past five years there has been approximately 90 such installations. Coastalwatch in conjunction with SLSA have developed a range of enhanced technologies that will assist beach management. These technologies (CoastalCOMS modules) include:

- **Vision:** Video data is captured from a network of shore-mounted video cameras, typically mounted on surf clubs. Access to video is usually via the internet, and the direct control of cameras provides active monitoring for rescue coordination.
- **Shoreline measurement:** CoastalCOMS measures mean sea level, high and low tide, shoreline position and other coastal features.
- **Wave Height:** The implementation of artificial neural networks generates estimates of near-shore wave height from global deep-water wave model output.
- **Beach Usage:** Monitoring beach usage is important for providing data to help predict future beach needs, levels of risk and to aid human resource planning.
- **Beach Risk:** The analysis of long-term video footage of beaches, in conjunction with data from other modules, enables the generation of a rating of beach risk.

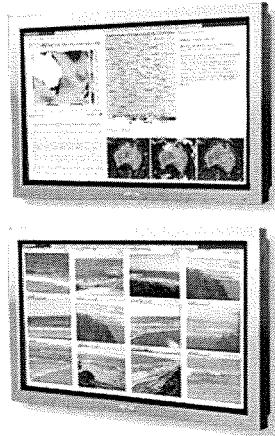


FIG 5. Coastalwatch camera vision and water condition forecasts (courtesy Coastalwatch)

2.6 EcoSurf

The forecast impacts of climate change and subsequent rise of sea levels potentially leaves Surf Life Saving (SLS) vulnerable. We will be one of the first organisations to be affected; we therefore are amongst the first to act.

As a proactive measure, SLSA has developed EcoSurf; a program for surf lifesavers to work together, with our partners and with local communities to make a positive environmental impact on Australia's coastline.

EcoSurf programs are currently being driven at a "grass roots" level through a number of surf lifesaving club best practice initiatives including renewable energy, recycling, water consumption programs, education, green clubhouses and marine and coastal care. SLSA, with the support of all levels of government, industry and through localised corporate support will expand local initiatives nationally.

These initiatives should be shared with other community organisations, in particular those who are situated in the coastal zone.

For example:

- Use of surf life saving clubs to showcase environmental practices
- Development of tools and resources based on the learning of SLS that can be made available to other community organisations
- Use of clubs to host community EcoSurf planning and workshops
- Community volunteers such as surf lifesavers involved in environmental monitoring. The Australian Beach Safety and Management Program (ABSAMP) may provide a mechanism for recording and promulgating relevant information.

2.7 Education and awareness

SLSA acknowledges the important role education and awareness has with coastal activity, recreation and safety. The impacts of climate change on coastal communities should be integrated into education and awareness programs.

Surf life saving clubs are available to provide opportunities as local centres for information, education and training on issues dealing with the impacts of climate change, in particular those relating to human safety.

2.8 Recommendations

It is therefore the position of Surf Life Saving Australia (SLSA) that:

7. The governments of Australia (Federal, State and Local) recognise the value SLSA's coastal safety services to coastal communities and visitors and ensure SLSA's ongoing involvement in planning, decision making, infrastructure provision and appropriate levels of support funding.
8. The governments should recognise the extensive network of SLSA surf clubs, lifeguards and operations support services and the role it can play in not only providing safety services, but in monitoring visually and physically the changing conditions of Australia's beaches and coastline.
9. Community and visitor safety on Australia's coast and beaches must be integral to any coastal policy, strategies and coastal management plans whether or not they are linked to climate change.

This can be achieved by engaging SLSA and its constituent groups in the State operations and the surf lifesaving clubs.

The involvement of SLSA should not be an after thought, but be absolute from the beginning of any planning phase through to implementation, monitoring and review.

10. SLSA coastal risk assessments, or equivalent, should be conducted on all coastal areas to which people have ready access; the priorities for which should be determined by a range of factors including population demographics, access and beach hazards.
11. The Council of Australian Governments should recognise the extensive SLSA network and take appropriate steps, both organisationally and fiscally, to integrate the SLSA network into emergency services preparedness, planning, and response systems and activities.
12. The use of technology is important to aid research into coastal changes resulting from the impacts of climate change.
13. The provision of funding, initial and ongoing, to provide regularly updated data on and visual surveillance of each of Australia's 500 most attended beaches, including those with a lifesaving service, will not only enhance safety provision but will provide a visual history of changing coastal conditions.
14. SLSA should receive the support of all levels of government, industry and local corporate support to introduce positive environmental initiatives such as renewable energy, recycling, water consumption minimisation and coastal care programs at *surf lifesaving clubs across Australia. These will be shared with other community organisations, in particular those who are situated in the coastal zone.*
15. Coastal education programs should have safety education (water safety, CPR, rescue and the like) integral to ensure the coastal activities are undertaken with safety of participants.

REFERENCES

1. Australian Bureau of Statistics, Regional Population Growth, Australia and New Zealand, 2001-02, cat. no. 3218.0
2. Australian Beach Safety and Management Program (ABSAMP), Surf Life Saving Australia
3. Australian Coastal Public Safety Guidelines – 1st Edition, Surf Life Saving Australia, Sydney 2007
4. Coastline Lengths, Geoscience Australia, www.ga.gov.au/education/facts/dimensions/coastlin.htm
5. Guidelines for safe recreational water environments – Volume 1, Coastal and fresh waters, World Health Organisation, Geneva, 2003
6. Hugo, G 1996, 'Counterurbanisation', Population Shift: mobility and change in Australia, eds. Newton, PW and Bell, M, AGPS, Canberra
7. National Aquatic and Recreational Signage Style Manual, Third Edition, July 2006
8. National Coastal Safety Report 2007, Surf Life Saving Australia, Sydney, Australia, 2007
9. National Cooperative Approach to Integrated Coastal Zone Management Coast – Framework and Implementation Plan, Natural Resource Management Ministerial Council, Australian Government, 2006
10. National Injury Prevention and Safety Promotion Plan: 2004-2014. National Public Health Partnership (NPHP), Canberra, July 2005
11. National Water Safety Plan 2004 to 2007, Australian Water Safety Council, Sydney 2004
12. Recreational Boating Survey Report (Maritime Safety Education Boating Survey Report) 2006, Maritime Safety Queensland, *Report*, 2007

ENDNOTES

ⁱ 1301.0 – Year Book Australia 2004, Australian Bureau of Statistics

ⁱⁱ Geoscience Australia at <http://www.ga.gov.au/education/facts/dimensions/coastlin.htm>

ⁱⁱⁱ Surf Life Saving in Australia saving lives in the water for more than 100 years – A Service Profile, 2007, pp12

^{iv} National Coastal Safety Report 2007, Surf Life Saving Australia

^v National Water Safety Plan, Australian Water Safety Council, July 1998

^{vi} National Water Safety Plan 2004 – 2007: Continuing cooperation and commitment in the fight against drowning, Australian Water Safety Council, August 2004, pp42

^{vii} Smartline Mapping at www.ozcoasts.org.au