

## Coastal drowning prevention through comprehensive risk management

Adam Weir<sup>1</sup> and Norman Farmer<sup>1</sup>

Surf Life Saving Australia<sup>1</sup>

1. The risk of drowning (fatal and non fatal) on the coast has many contributing factors
2. Risk management concepts of hazard, uncertainty and opportunity based risk collectively provide opportunities for drowning prevention.

In many countries of the world people have settled by the coast. For example in Australia more than 85% of the population live near the coast and our tourist beaches alone receive an estimated 100 million visitations every year. The 56,000km coastline of Australia, while an attraction for living and visiting, has it inherent largely unpredictable risk.

Risk assessment techniques that use a range of data inputs to underpin risk analysis and evaluation are vital to addressing public safety treatments at beaches and along the coast. Coastal risk assessment is now a vital process for identifying, analysing and evaluating risk to human life on beaches and the coastline.

Risk assessments have been provided by SLSA to coastal land managers and developers for more than a decade. These assessments involve the following steps:

1. Determine the minimum acceptable level of risks and potential injuries at the location through completion of a risk assessment in accordance with recognised guidelines, standards and best practice;
2. Provide economically sustainable risk mitigation options;
3. Provide recommended staging plans considering the environmental conditions, forecast settlement areas, beach access and usage;
4. Review the status of aquatic safety and signage management;
5. Evaluate the level of compliance or non-compliance with relevant regulations and standards;
6. Reference material and resources;
7. Relevant standards including ISO 20712-1-2008 and AS NZS ISO 31000-2009;
8. Consult with relevant community stakeholders including volunteer surf life saving clubs, beach safety liaison committees and other community organisations involved in or impacted by beach safety.

In recent times SLSA has invested significant resources in further developing its Coastal Public Safety Risk Assessment services. This includes:

1. Spatially enhancing the Australian Beach Safety and Management Programs beach database, containing close to 12,000 individual beach locations. This enhancement provides SLSA with a Geographical Information System containing data on every ocean beach along the coast of Australia.
2. Ruggedised computer hardware for field use during the provision of coastal public safety risk assessment. This hardware provides connectivity for assessors to access SLSAs databases in the field as well as allowing once only data entry from the field.
3. Instant report production – once risk assessment data has been collected in the field reports can be immediately produced and taken to the land manager for discussion.

Risk assessments are beneficial in providing land managers with the detail necessary for them to understand and deal with issues surrounding coastal safety and drowning. By continuing to offer this service to land managers around the Australian coast, land managers are provided with evidence and implementation plans required to help address all quadrants of the drowning cycle, providing an holistic approach to coastal drowning prevention. SLSA has also developed a course in Coastal Risk Assessment which is offered to all interested parties. The course provides participants with the relevant skills and knowledge to provide coastal public safety risk assessment. In recent times SLSA has also provided coastal public safety risk assessment services internationally, assisting Lifesaving Society Korea in its annual coastal audit process.

The next step is to trial these practices in less developed and developing nations to validate the hypothesis that coastal risk management concepts, techniques and actions are effective in drowning prevention irrespective of geographic, demographic and socio-economic conditions.

### Corresponding Author

Norman Farmer  
 General Manager Strategic Development  
 Surf Life Saving Australia  
 Locked Bag 1010, Rosebery NSW Australia 2018  
 Email: nfarmer@slsa.asn.au  
 Website: www.slsa.com.au  
 Telephone: +61 3 9785 9368