

## **Wollongong Landslides: Hazard Modelling and Risk Assessment**

### **Australian communities are affected by landslides**

Landslide in Australia, for the most part, is not seen as a major threat to our urban communities. However, this general belief is far from the reality of the situation. Our history of landsliding is highlighted with devastating events such:

- Thredbo landslide, July 1997; 18 people killed
- Gracetown cliff collapse, September 1996; 9 people killed

In Australia, there have been 37 recorded fatal landslides since 1842, which have been responsible for the deaths of 83 people. It is almost certain that these statistics are incomplete and that the number of fatalities is much higher.

### **Wollongong landslides are frequent, dangerous and costly.**

The city of Wollongong is on Australia's east coast, approximately 80 km south of Sydney. Today, Wollongong has one of the highest population growth rates in NSW. Since 1887, 478 landslides have been recorded at Wollongong, at least two people have been killed, more than 200 buildings destroyed or damaged and there is constant disruption to infrastructure and services. It is estimated that between 1989 and 1996, the cost of landsliding to railway infrastructure alone in Wollongong was \$25 million annually. Extensive areas of the Wollongong hinterland are prone to landsliding from heavy rainfall events, as demonstrated by the August 1998 storms. During this event, 148 landslides were reported and access to the city was cut by landslides and floodwaters for up to 24 hours. It is estimated that up to \$100 million dollars damage resulted.

### **Geoscience Australia is committed to landslide modelling and risk assessment.**

Geoscience Australia is working in collaboration with the University of Wollongong and the Wollongong City Council to develop a landslide hazard and risk assessment for the region. Research will focus on predicting further areas of landslide activity (Figure 1) as well as identifying and measuring risk to the community from existing and predicted landslides. By measuring physical attributes of existing landslides and using a geographic information system to identify similar patterns elsewhere in the region areas of potential activity are defined. By then examining the elements at risk such as housing, demographics, infrastructure in relation to the landslide hazard, it is possible to measure the risk to the community.

These results will help town planners and emergency managers make informed decisions so that safer communities can be developed via the implementation of appropriate planning, mitigation and prevention measures.

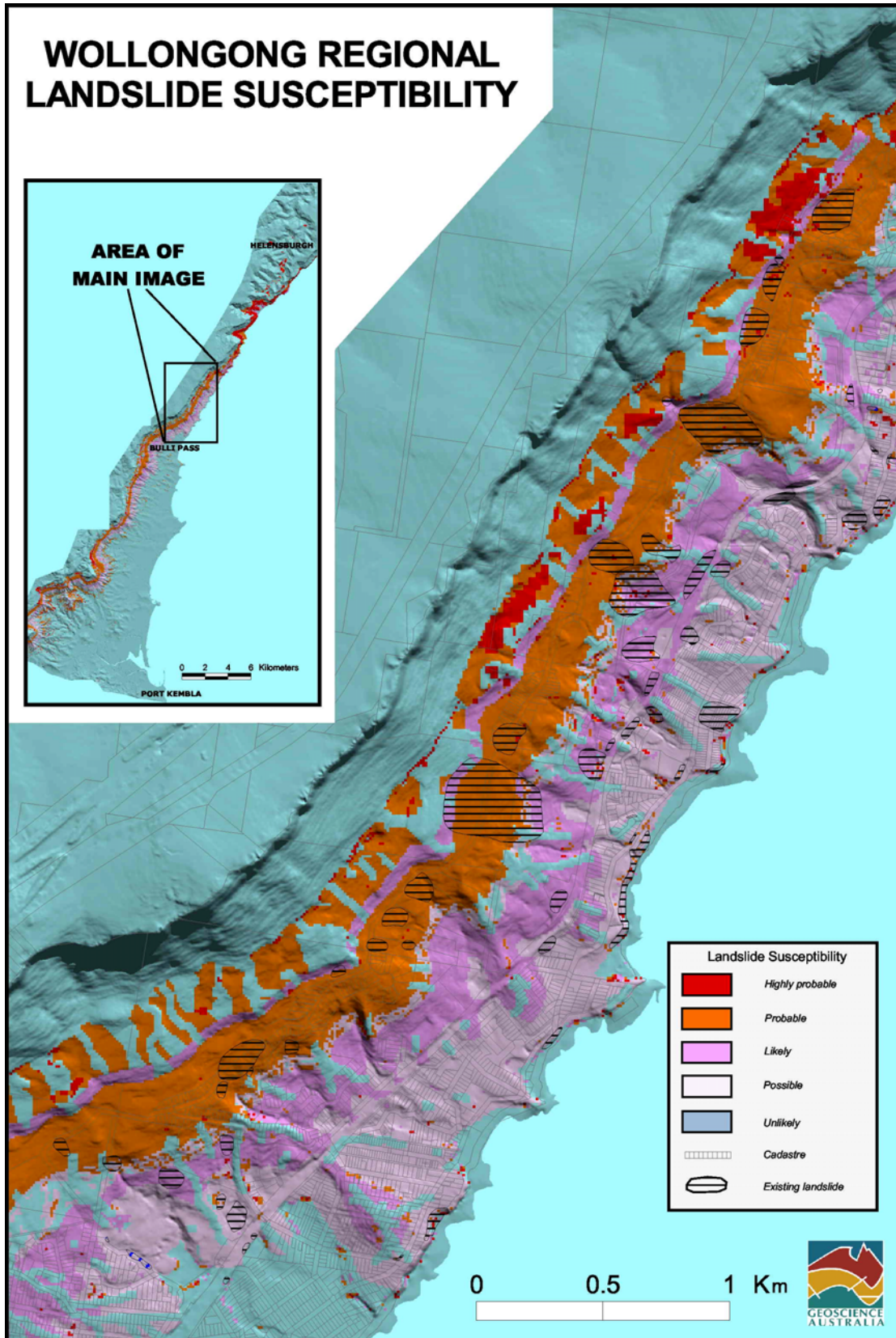


Figure 1. Wollongong regional landslide susceptibility – this vulnerability map provides emergency managers, town planners and risk managers with spatial representation of relative risk.