

Coastal Hazards Mitigation, WA



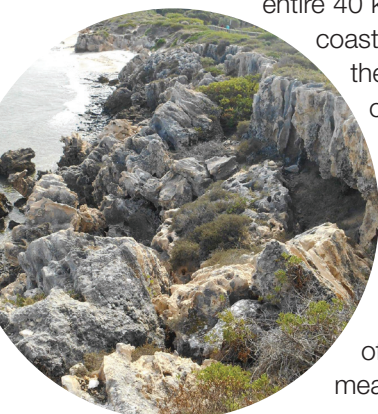
Limestone at a beach along the surveyed coastline.

Limestone outcrops occur regularly along the Wanneroo coast, which incorporates popular locations such as Two Rocks and Yanchep. These outcrops can become hazardous in an active coastal environment. Douglas Partners was able to help the City of Wanneroo protect the public by undertaking a limestone hazard survey and designing remedial measures.

Following the tragic rockfall event in Gracetown in 1996, City of Wanneroo has undertaken a program of periodic limestone hazard assessment along the 40 km Wanneroo coastline, leading to implementation of remedial measures to reduce consequent risks to acceptable levels.

Douglas Partners was pleased to be appointed to undertake the hazard assessment in 2015. Our approach to the assessment was as follows:

- Identify mechanisms for instability, such as undercutting, toppling of blocks, cave formation and open solution tubes, based on past experience and previous studies;
- Undertake a visual survey of the entire 40 km Wanneroo coast, recording the locations of limestone outcrops, potential areas of instability, and a field assessment of control measures;



- Carry out a risk assessment of the identified hazards using both a qualitative method, using a typical risk matrix, to assess risk of harm and a quantitative assessment of risk to life in accordance with the Australian Geomechanics Practice Note Guidelines for Landslide Risk Management (2007); and
- Where risks were unacceptable, design mitigation measures to reduce the risk.

Douglas Partners identified a number of areas where limestone hazards presented an unacceptable level of risk to the public and mitigation measures were suggested. The study sought to use signs and fencing where possible rather than more extreme measures that would be costly and difficult to undertake, would be detrimental to well liked beach locations and may simply move the problem along the coast or further inland. Where this was not possible, such as at the busy Yanchep beach, targeted removal of potentially unstable blocks was recommended.

CLIENT City of Wanneroo

YEAR 2015

SCOPE OF WORK

- Geohazard identification
- Landslide risk assessment using both qualitative and quantitative frameworks
- Remedial measures design

“Douglas Partners were pleased to assist the client in keeping the public safe from limestone hazards along the Wanneroo coast by applying our skills, experience and knowledge to sound risk assessment frameworks.”

*Paul Hutchinson
Project Manager*