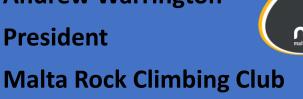
### The implications of coastal erosion - a rock climber's perspective



**Andrew Warrington President** 







### Rock Climbing and Coastal Erosion

- Rock climbing in Malta where we climb
- How we experience coastal erosive forces
- Coastal Erosion can be good
- Coastal Erosion can be bad micro-erosion & macro-erosion
- Three examples of actual and potential rock movements and their consequences on climbers:
  - Ghar Hasan what could have happened
  - Ras il-Qammieħ what may happen soon
  - Azure Window what did happen





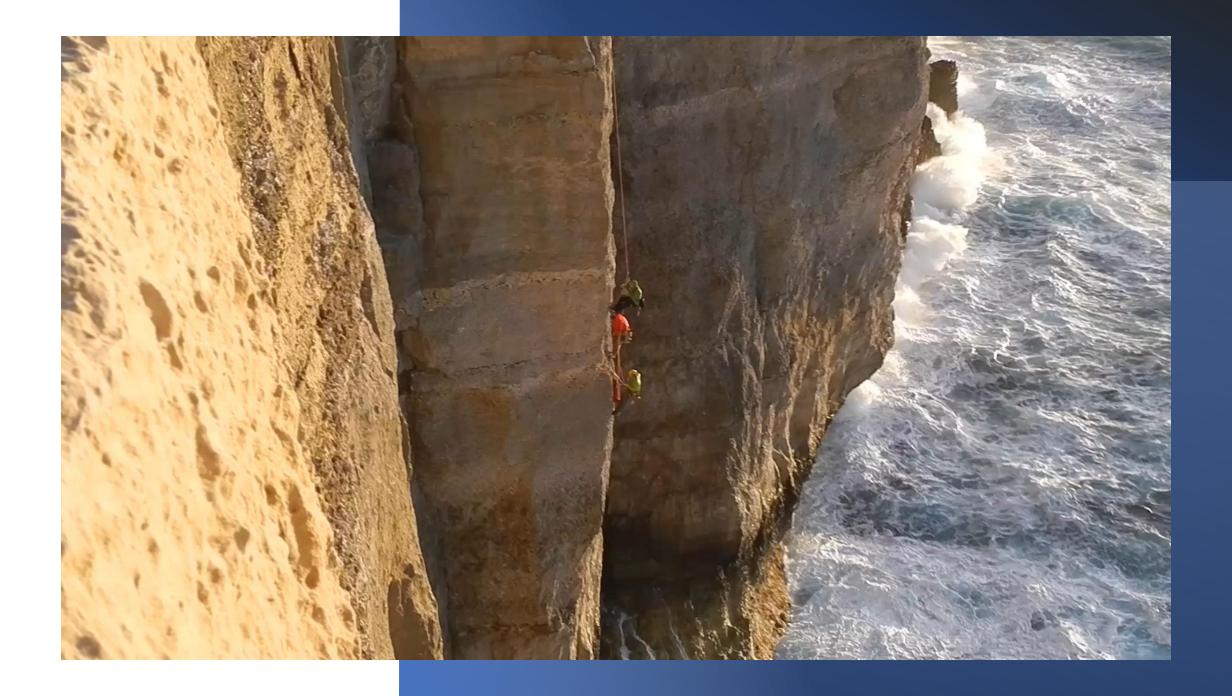
Climbing Crags of the Maltese Islands

# How we witness the forces of Coastal Erosion















### Coastal Erosion can be a good thing









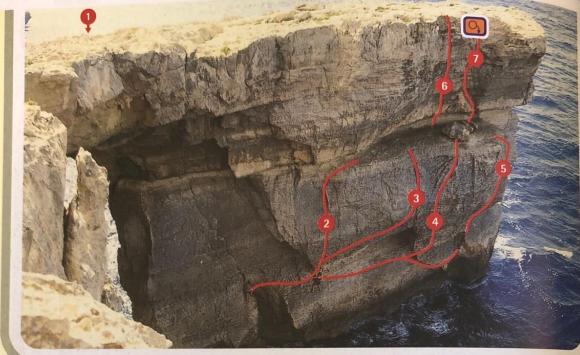


### Coastal Erosion can be a bad thing



Injuries sustained when a flake broke off...

### 292 Azure Window



**Azure Window** 

#### Azure Window



All routes, except the first, are on the north face, hidden from the tourist's eyes and from the sun. The face overhangs considerably so approaching the bottom can be problematic.

#### Either:

- a Catch a boat to a chimney/groove at the L end of the face, solo up 8m to belay on slings and large nuts, or;
- b A diagonal abseil, using a second rope starting down an overhanging chimney to a large ledge. Please note that in this case there is no in-situ gear for abseiling. The symbol just indicates were to abseil from. Walk with the abseil rope to it's L end and a bolt. Clip this and bolts down the overhanging prow below to belay on slings and nuts in the chimney/groove. The 32m abseil takes the line of Space Oddity.

#### Spiders from Cars ★



The spectacular landward facing arête of the pillar visible

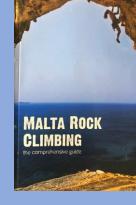
the traverse line downwards. Breach the roof (N on lip). Poor gear above. Ns to belay on ledge.

Malta Rock Climbing —

Ing chimney to a large ledge. Please note that in this less were to abseil from. Walk with the abseil rope to low to belay on slings and nuts in the chimney/groove.

The Comprehensive Guide 2007

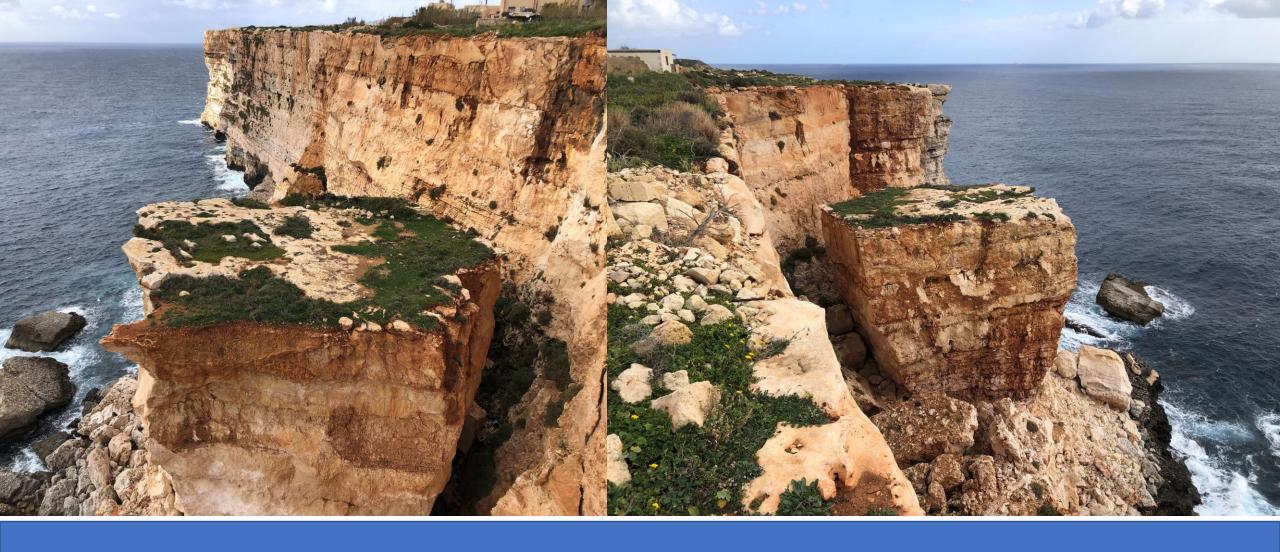
### Guidebook page describing rock climbs on the outside face of the Azure Window





Three examples of actual rock movements and their potential consequences on climbers:

Ghar Hasan – what could have happened Ras il-Qammieh – what may happen soon Azure Window – what did happen

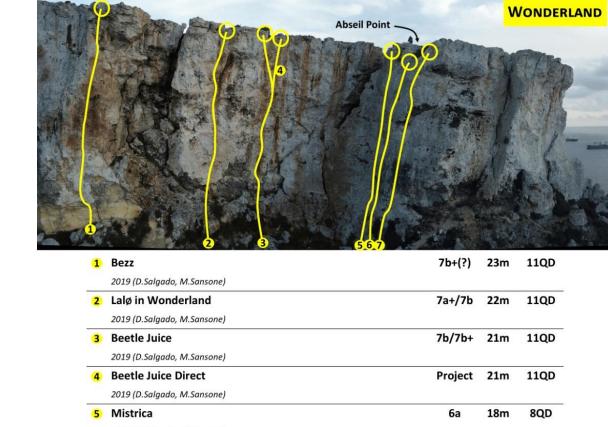


### **Coastal Erosion – What could have happened**

Rockfall near Ghar Hasan 14th Nov 2004

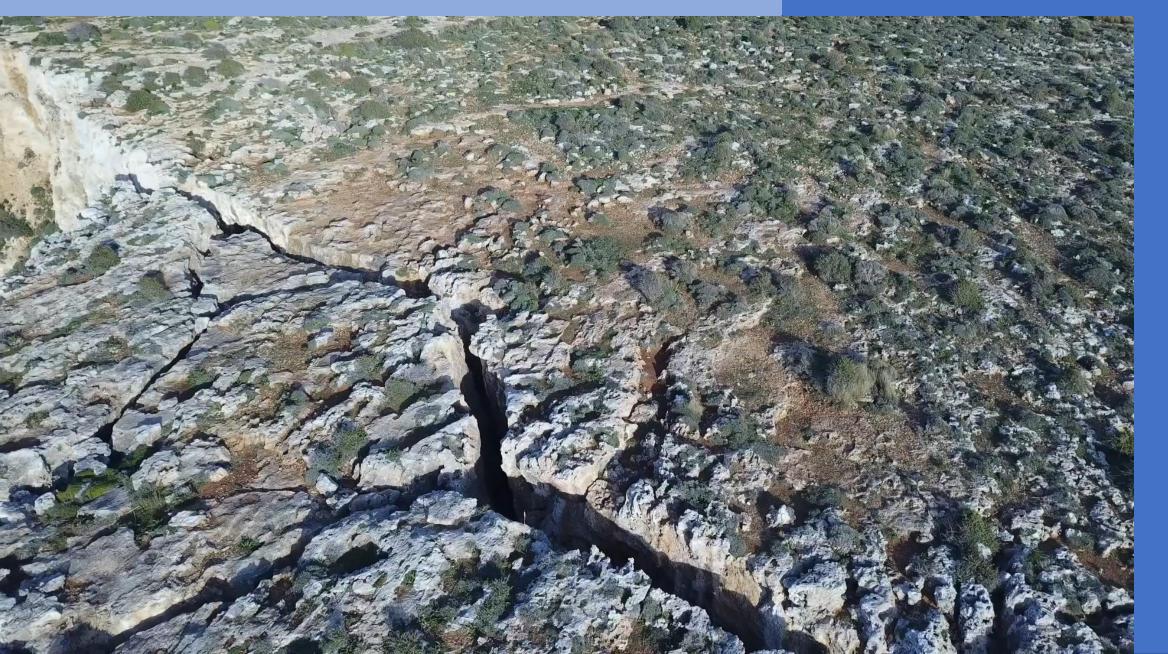
### Coastal Erosion - What looks likely to happen soon



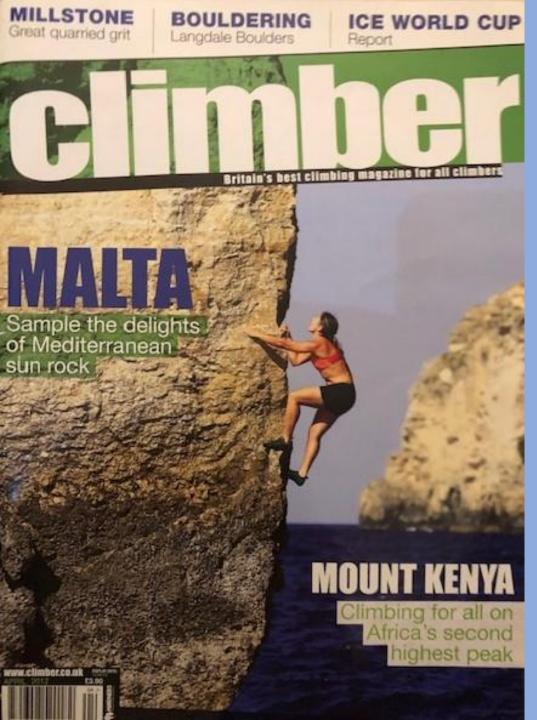


Recently developed crag at Ras il-Qammieħ

### Ras il-Qammieħ viewed from the air







## Front cover of Climber magazine March 2012



