

# BSG Conference Attendance Grant for European Geoscience Union 2018

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## Media summary

My trip to the European Geosciences Union (EGU) 2018, supported by a BSG Conference Attendance grant, presented a unique opportunity to present initial results from my PhD to the global geomorphology community. It also comprised a hugely valuable opportunity to meet other young career and experience researchers working in the field of geomorphological research.

**Conference Presentation** 'Geomorphic Risk: investigating interactions between geomorphology, erosion and flooding risk at the coast' (<https://meetingorganizer.copernicus.org/EGU2018/EGU2018-677-1.pdf>)

Risks relating to water oversupply (eg: extreme flood events) and undersupply (eg: drought) first appeared in the World Economic Forum's 'Top 5 Global Risks' in 2011 and have persisted in every year since then. Erosion and flooding resulting from events such as Hurricane Sandy or the UK's 2013/14 winter storms demonstrate how the sum of impact and consequence can be especially severe at the coast. Often, erosion and flooding risks are analysed separately owing to complex relationships between driving processes, morphological response and risk receptors.

The paper presented at EGU2018 characterised erosion-flooding interaction on the barrier coastline of North Norfolk, UK. The research collated and harmonised historical, remotely sensed and field datasets to establish forcing-response relationships over an extended (>120 year) period. This revealed three 'expressions' of erosion-flooding interaction:

1. The fact that future flood risk depends on future shoreline position.
2. The importance of coastal morphology in modifying water levels.
3. The existence of strong coupling of erosion and flooding impacts during extreme surge events.

The extent to which these expressions are prevalent in different coastal settings is an important point of discussion – and something that should be considered before detailed erosion and flood risk analyses are undertaken.

These findings were presented as a PICO (Presenting Interactive Content) including a 2-minute introduction followed by an hour discussion period (Figure 1). I found the session exceptionally useful with numerous discussions regarding the above findings and future directions. Key takeaways included:

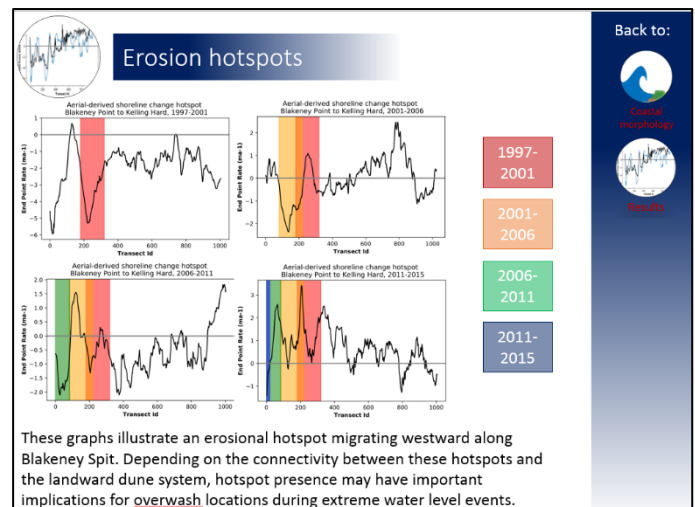
- How to account for sea-level-rise when projecting future shoreline position
- How to 'track' hotspots of coastal erosion and predict locations susceptible to hotspot development
- The extent to which this kind of work can fill a spatial disjunct between global scale and local scale flood risk analysis.

## Additional Conference Activities

Alongside the obvious benefits of presenting a paper at a major international conference, EGU2018 offered numerous other valuable activities. Two such activities are especially worthy of highlight:

- Firstly, the BSG funded Flood Risk, Resilience and Adaptation Network (FRRAN) led by Dr Chris Hackney. This initial meeting sought to answer a number of key questions regarding the purpose of the network and some aims moving forwards. For me it was a valuable chance to meet other researchers working on the relationship between geomorphology and flood risk.
- Secondly, the chance to chat to developers of Google Earth Engine (GEE). Given the fast-moving nature of this satellite data analysis platform, it was useful to chat to people working on development of the platform. I was able to gain feedback on some initial analysis including pointers for improvement and new areas for investigation in the future.

I am hugely grateful for the BSG Conference Attendance Grant without which the above would not have been possible. Thank you.



**Figure 1:** An example slide from my PICO presentation.