Globally, concerns about the impacts of greater storms and coastal erosion are already giving rise to increased legislative regulation and an increase in litigation about coastal issues.

Reflecting the importance of these developments, in 2017, the United Nations issued a global review entitled “The Status of Climate Change Litigation”. The opening paragraph of that review made the following observations:

“Over the last decade, laws codifying national and international responses to climate change have grown in number, specificity, and importance. As these laws have recognized new rights and created new duties, litigation seeking to challenge either their facial validity or their particular application has followed. So too has litigation aimed at pressing legislators and policymakers to be more ambitious and thorough in their approaches to climate change. In addition, litigation seeking to fill the gaps left by legislative and regulatory inaction has also continued. As a result, courts are adjudicating a growing number of disputes over actions - or inaction - related to climate change mitigation and adaptation efforts.”

One of the examples of litigation which appears in that review is litigation in New South Wales, Australia concerning coastal processes and erosion at the iconic Australian town of Byron Bay. Cape Byron is the most easterly point of the Australian coastline. We have been involved in the conduct of that litigation over the last 10 years and in other cases in Australia which reflect the trends identified by the United Nations in its global review.

Figure 1 - A view of Byron Bay Embayment

There have been more than 7 separate coastal court cases in the Byron Bay Embayment over the last 10 years. The various issues in these Australian court cases are typical of the issues affecting many coastal communities around the world. Key features which have been the subject of legal action include the impact of past historic protection works alleged negligent design and construction of other protection along the beach, the ability of the local authority to fill in gaps in the existing structures by an interim rock wall, the rights of the residents to retain and repair their existing protection and the ability of the government bodies to take away existing coastal protection and impose planned retreat.

Around the world, similar issues are arising. We have extended our review to touch upon some recent cases and legislative responses in the US, New Zealand and Europe.

Some of the court actions under review involved evidence given by professional engineers assessing coastal processes, shoreline dynamics and transport processes. In some of these cases, modelling has been sought to be deployed as evidence on which judges can make findings of fact as to the coastal processes at work, the impact of man-made structures and likely future impacts of climate change.

We will also identify what lessons can be learned from these cases for coastal engineers currently analysing coastal processes and dynamics as part of an active coastal management process. Court cases bring the professional assessments of coastal engineers under close scrutiny. Evidence may be required according to court rules and procedures with which most engineers are not familiar.

Some common issues and themes globally which we will review are:

(a) the rights of private property owners in existing built coastal communities under threat;
(b) the obligations to correct or protect communities from the impacts of past coastal protection measures which themselves have caused erosion or downstream impacts;
(c) the manner in which analysis of coastal processes including modelling can be deployed in court cases;
(d) legal duties in respect of coastal properties affected by harsher storms and increased risk of erosion.