

# Local councils and climate change: a process for assisting adaptation in Sydney, Australia



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## Summary

Effective responses by local government are critical to living with climate change. To assist the development of effective adaptation responses in Sydney, Australia, a team of social, economic and climate researchers have been working with coastal councils to conduct an integrated assessment of vulnerability and discuss practical responses to climate change impacts. The research is one of five integrated assessment projects supported by the Australian Greenhouse Office.

## Assessing vulnerability

The first phase of the project involved assessing and mapping vulnerability across five impact areas:

- heat-related health effects;
- coastal hazards;
- urban stormwater management;
- bushfire; and
- degradation of ecosystems.

Spatial estimates of vulnerability were determined through the integration of multiple indicators representing the three components of vulnerability: exposure, sensitivity and adaptive capacity (Figure 1).

## Discussing adaptation

The second phase of the project involved a series of workshops with all coastal councils in the Sydney region to present the outputs of the vulnerability assessment and discuss:

- How climate change may impact local councils
- Council capacity to adapt
- Needs for further research through case studies

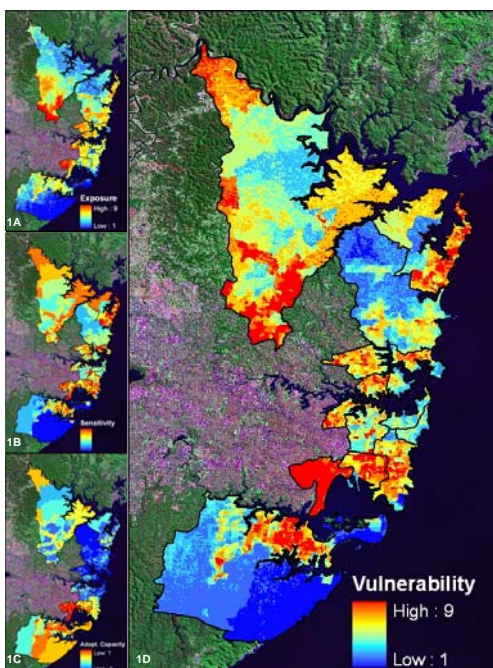


Figure 1: Vulnerability of the Sydney coastal region to extreme heat events and adverse health effects. Parts A, B, and C represent exposure, sensitivity, and adaptive capacity, respectively. Part D represents the integration of these components into net vulnerability.

The workshops involved a facilitated process to develop mind maps of impacts and relationships (Figures 2, 3). These were represented in Vensim® software and presented for feedback to participants. Discussion focused on improving understanding of climate change and considering potential opportunities and barriers to adaptation. Councils noted that observed changes in beach erosion and storm intensity are already being attributed to climate change impacts (Figure 4).



Figure 2: A workshop was held with staff from each coastal council in the Sydney region to discuss impacts of climate change.



Figure 3: The relationships between different drivers and climate impacts were mapped and captured in Vensim® software.

## Case studies of responses

The third phase of the research involves developing case studies focusing on key aspects of climate change for Sydney coastal councils. From sea level rise to extreme weather events, climate change affects local government in particular ways which are being explored by working directly with council staff on focal areas.

## Extending a learning focus

By taking a participatory approach, the research project seeks to foster broader social learning and build the capacity of local councils to adapt as their understanding of climate change continues to evolve. In order to extend this learning process, the researchers are conducting an evaluation of the different project phases and their outputs with a view to extending the learning focus to other contexts.

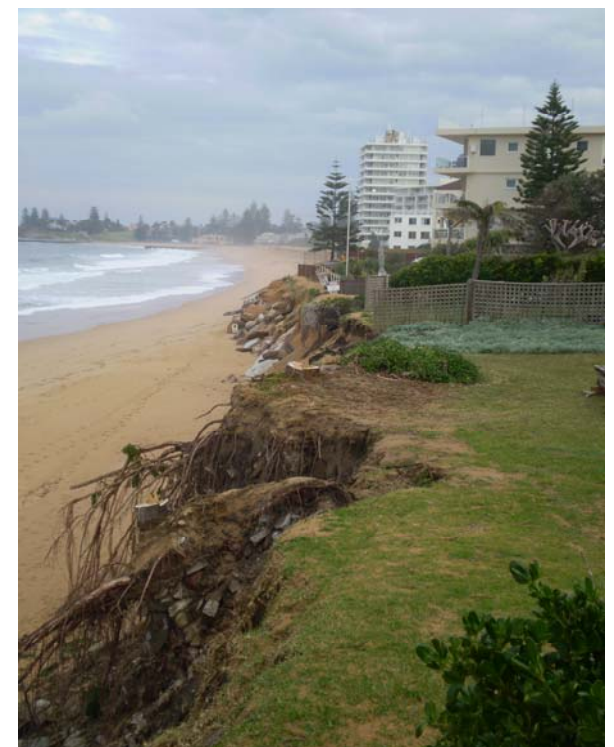


Figure 4: Recent intense storms and beach erosion have been attributed to climate change.

### Further information

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