



Comhshaol, Pobal agus Rialtas Áitiúil
Environment, Community and Local Government

Environmental Services Training Group

LOCAL AUTHORITY ENVIRONMENT CONFERENCE
2017

Protecting the Environment for Future
Generations

Minella Hotel, Clonmel Wednesday 24th. May 2017.

Protecting the Environment for Future Generations

UrbAdapt – A look at Climate Change impacts within the Urban Environment

Session 1 Climate Change 11:15-11:35

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Outline

- ❑ The Context: Global Urbanisation
- ❑ Overview of urban climate effects
- ❑ Evidence of urban climate effects – Ireland (Dublin and Clonmel)
- ❑ Climate Action and the urban environment: Co-benefits

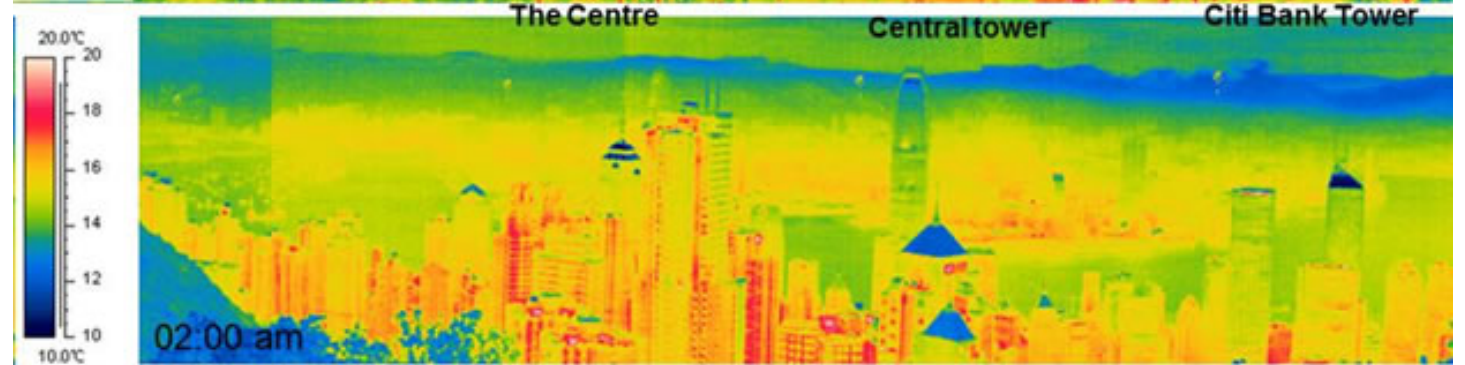
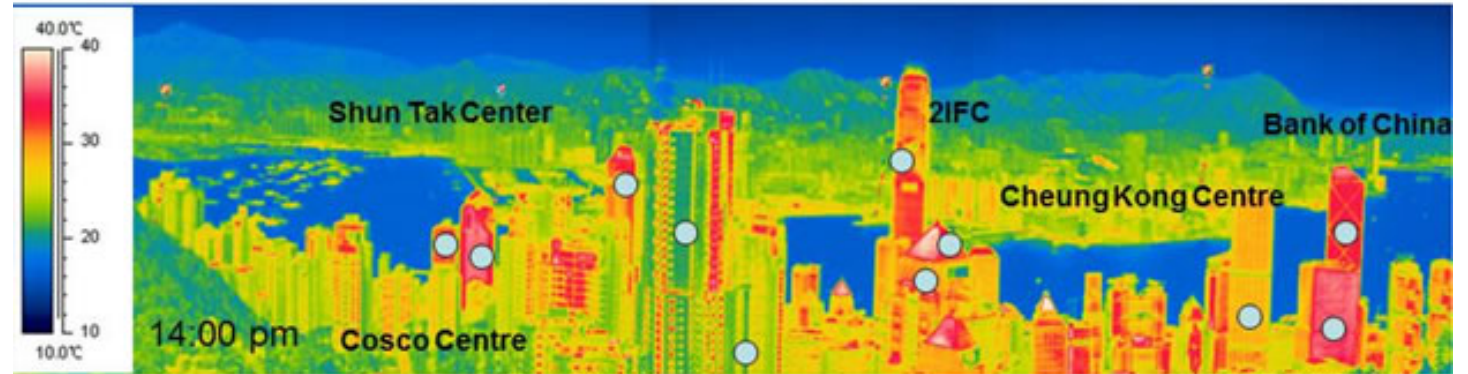
The Context: Global Urbanisation

- ❑ 2007: UN Reports > 50% of global population now resides in Urban Areas
- ❑ 2017: 57.84% (4.3 billion) of the global population is defined as “urban”
 - Projected to reach 66% by 2050
- ❑ Trend is expected to continue (but slow after 2030)
- ❑ Driven by natural increase and ‘drawing-in’ of rural population
- ❑ 2016: Urban Environment occupies 2-5% of global land depending on definition
- ❑ Accounts for 75% of energy demand and subsequent GHG emissions
- ❑ The urban environment is the dominant feature of the **Anthropocene**

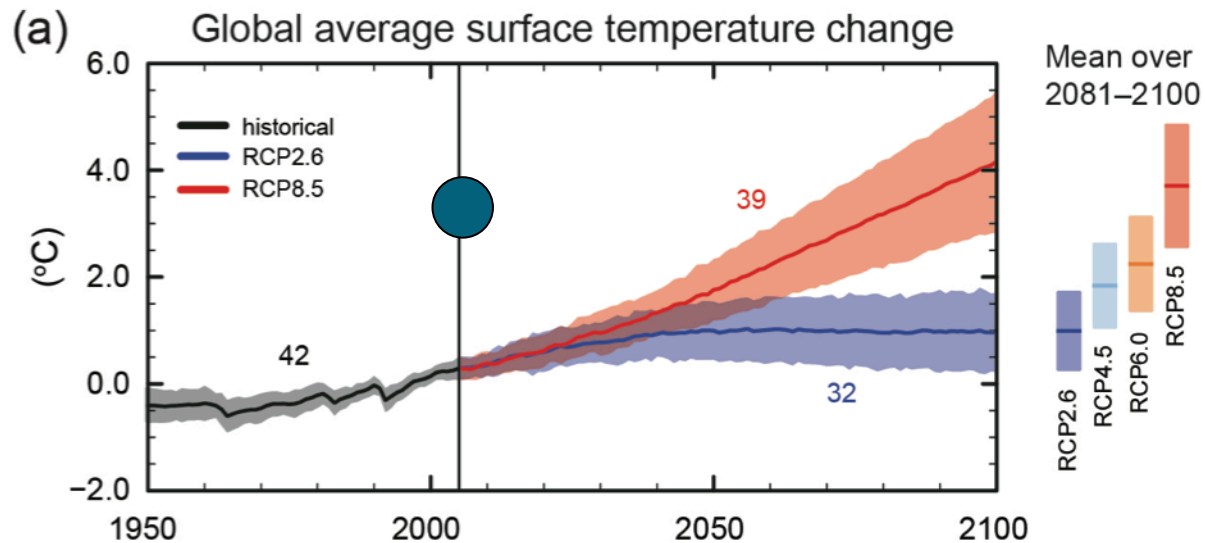
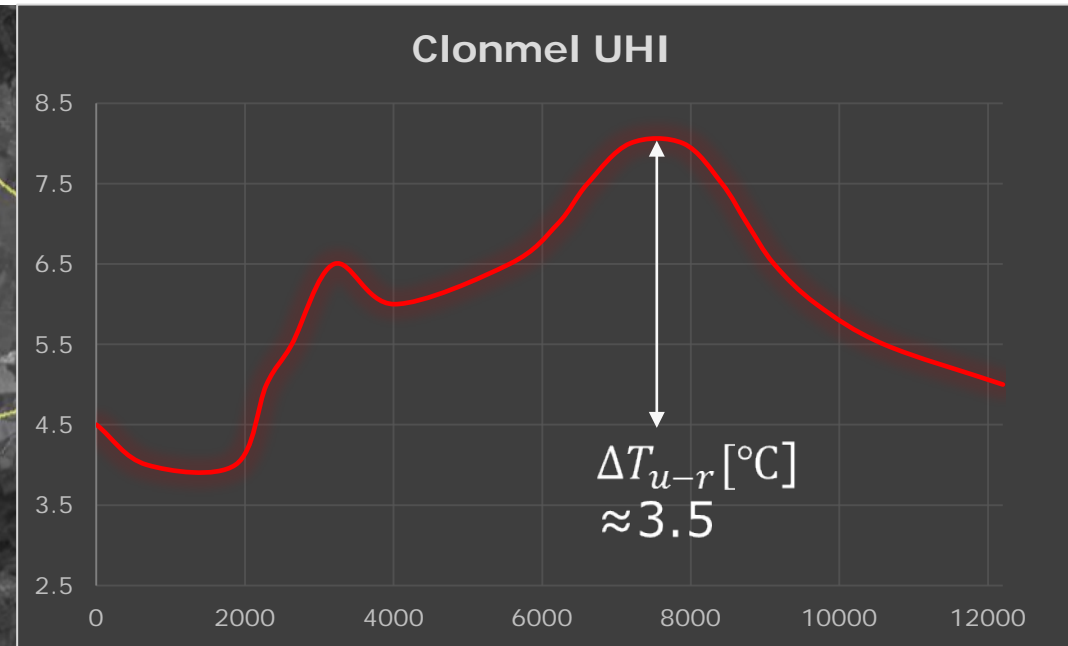
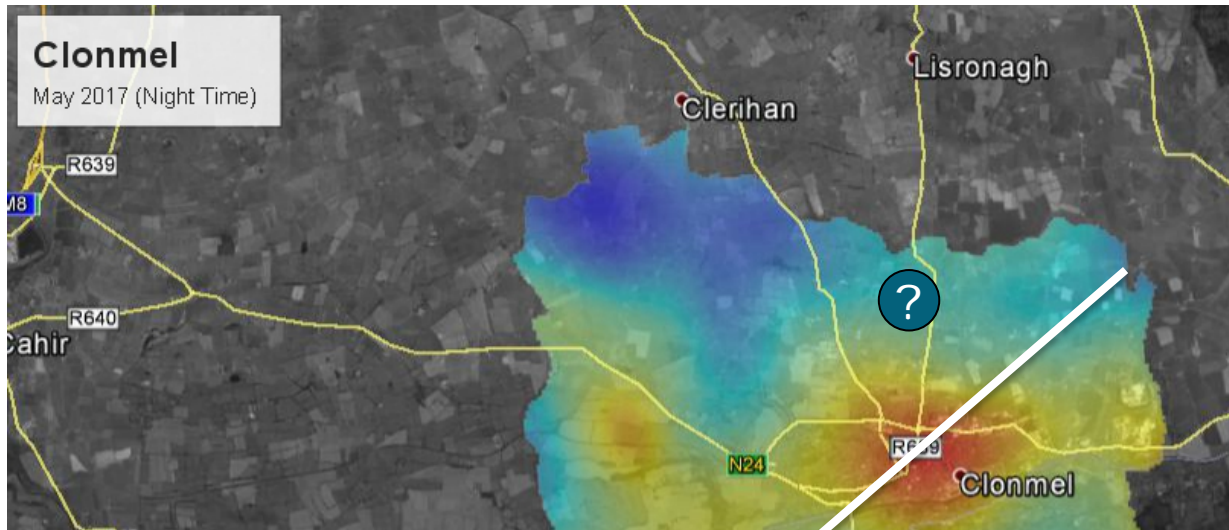


The Context: Global Urbanisation

Urban Climate Effects

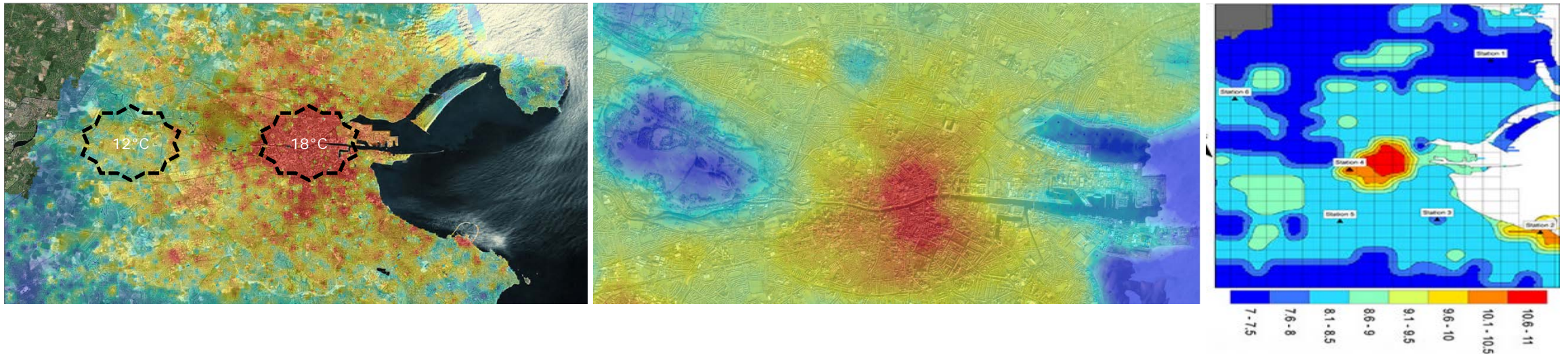


Evidence for urban climate effects - Ireland



Graph is from WG1 in AR5 of the IPCC - made available through Climate Ireland

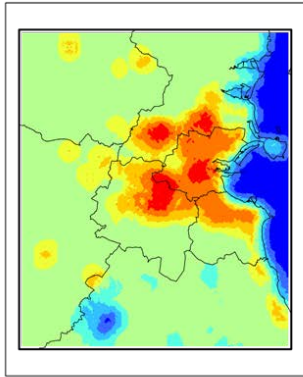
Evidence for urban climate effects - Ireland



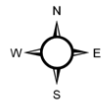
- ❑ The Urban Heat Island phenomenon has been studied in Ireland before, almost exclusively in Dublin
- ❑ Published papers include Sweeny (1987), Graham (1993) and Alexander and Mills (2015)
- ❑ “Urban Heat” is currently not seen as a potential hazard but this may change under CC - EPA funded **Urb-Adapt** Project: www.urbadapt.com/

Evidence for urban climate effects - Ireland

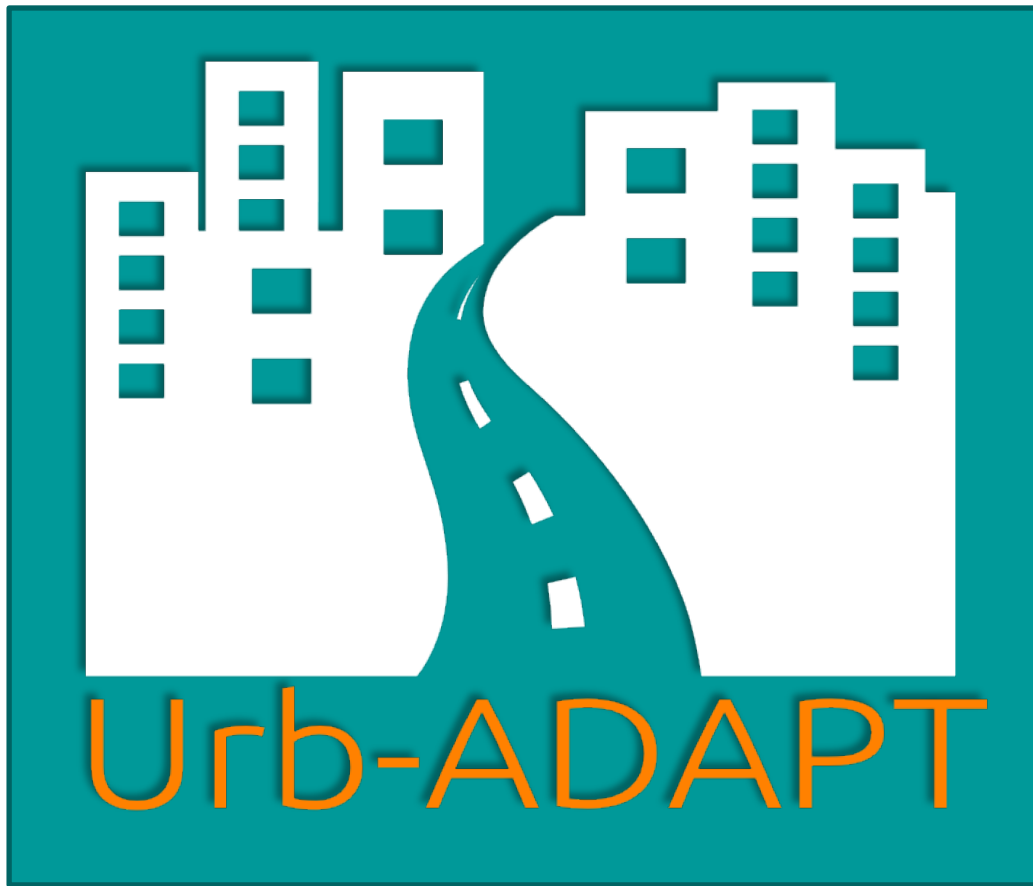
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Climate Action and Cities: Co-benefits

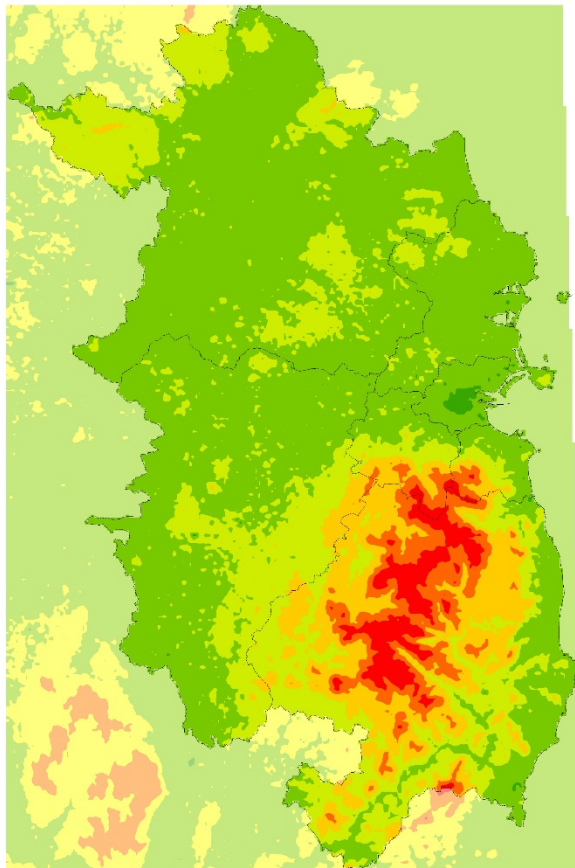


www.urbadapt.com

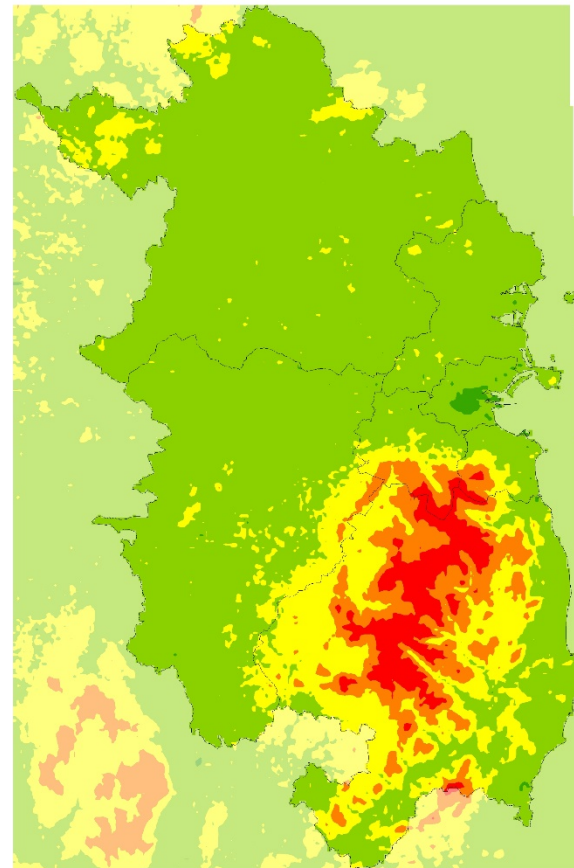
- Urb-ADAPT is working towards quantifying the potential impacts of:
 - Increased Air Temperatures on public health and Energy Use
 - Sea Level rise and Erosion on Coastal Inundation
 - Precipitation exposure due to urbanisation
- Covering the EMRA up to 2060, and will provide adaptation options and implementation guidelines

Climate Action and the urban environment: Co-benefits

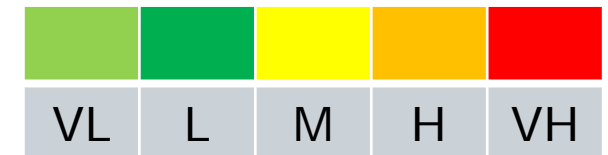
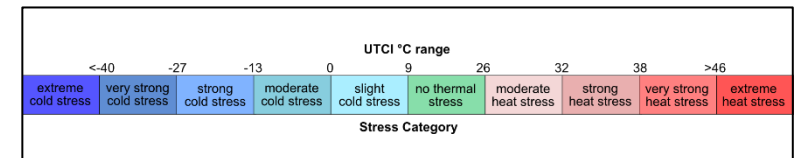
RCP 4.5 2020s



RCP 8.5 2020s

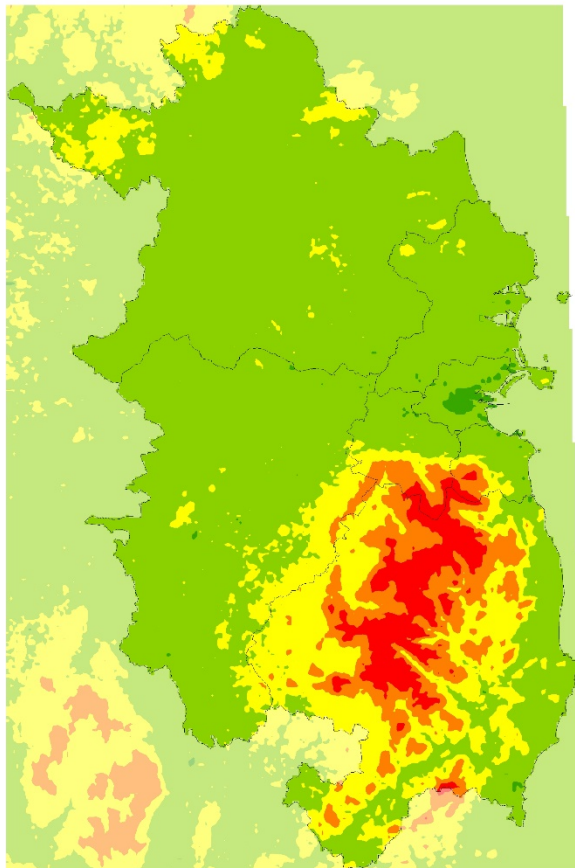


Risk Map for all thermal Stress Categories

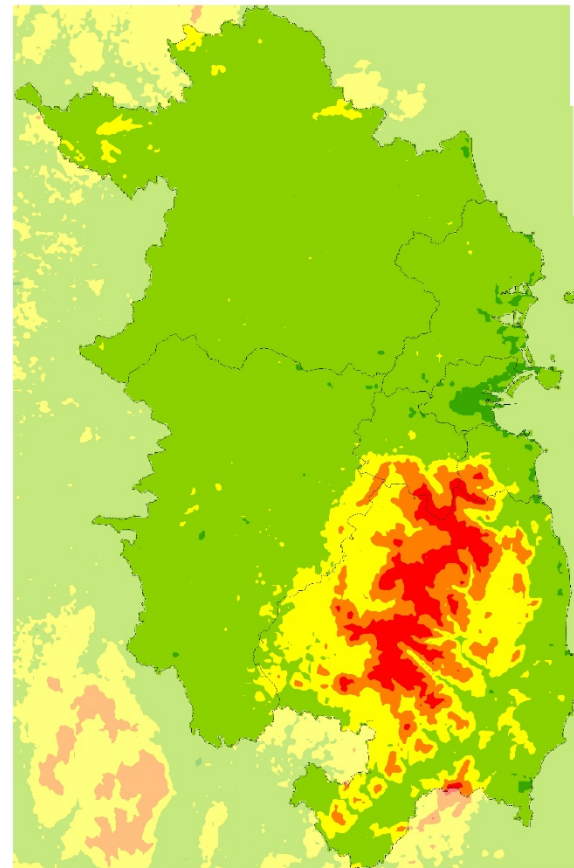


Climate Action and the urban environment: Co-benefits

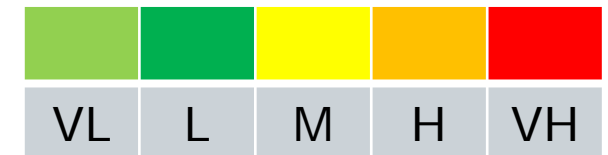
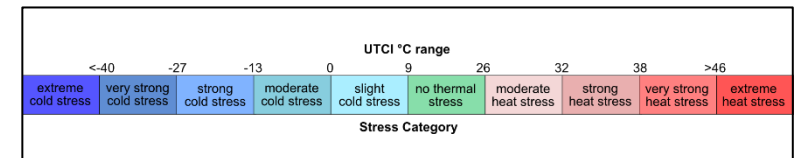
RCP 4.5 2050s



RCP 8.5 2050s

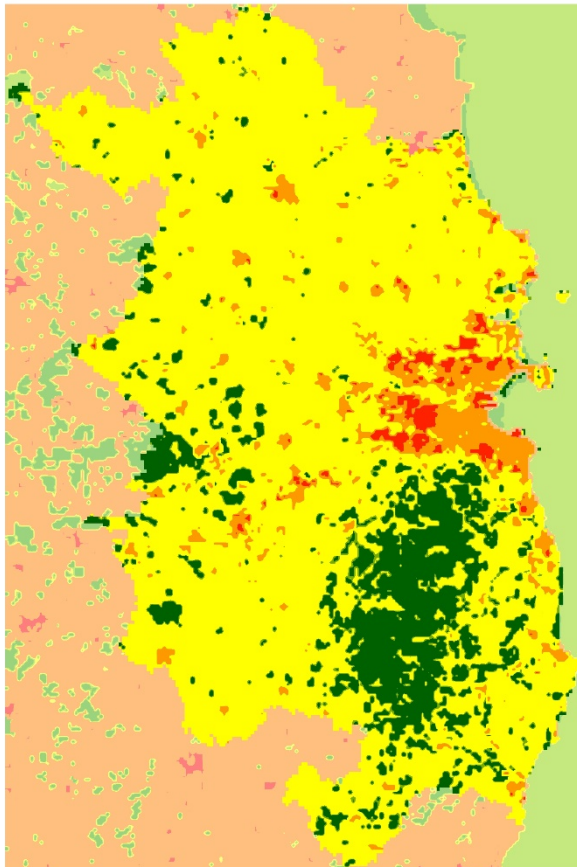


Risk Map for all thermal Stress Categories

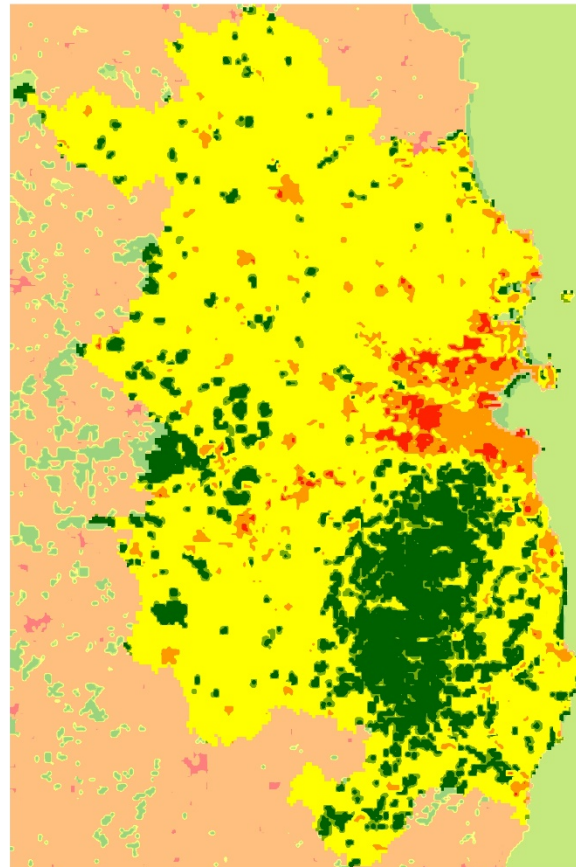


Climate Action and the urban environment: Co-benefits

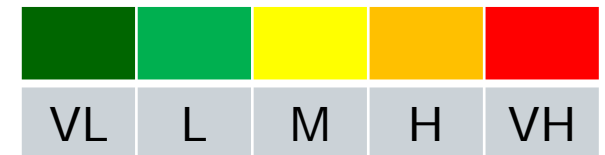
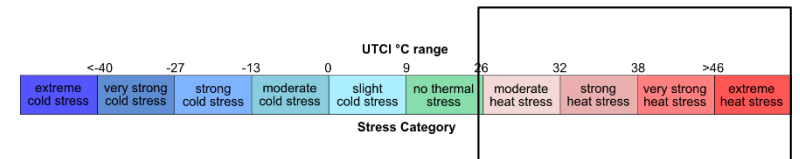
RCP 4.5 2020s



RCP 8.5 2020s

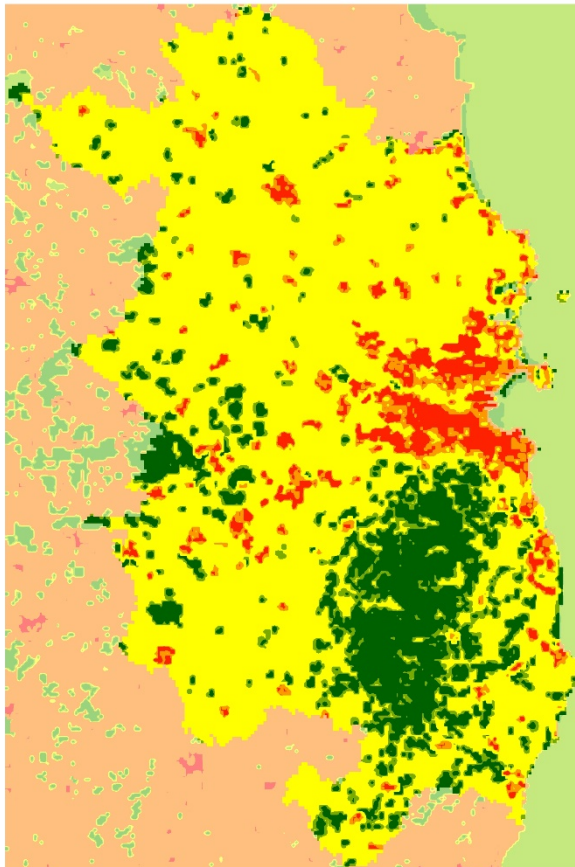


Risk Map for excess thermal Stress Categories

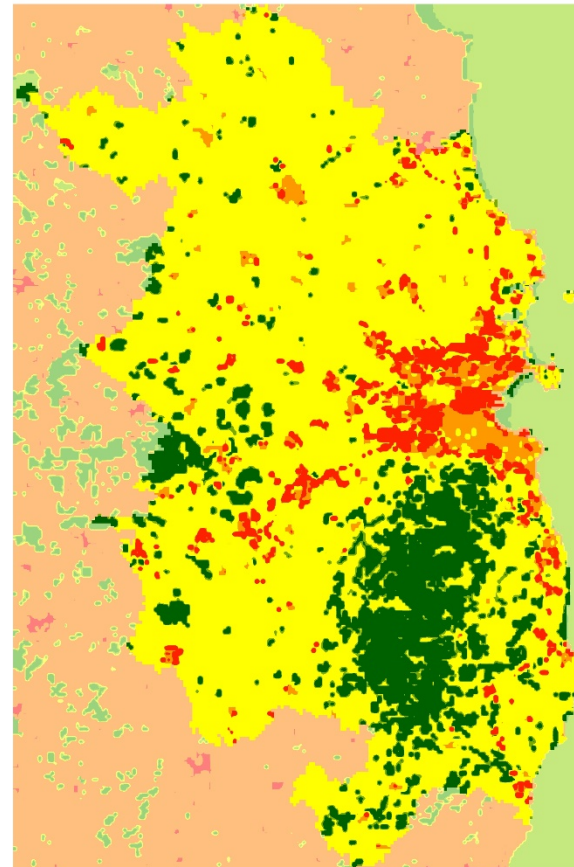


Climate Action and the urban environment: Co-benefits

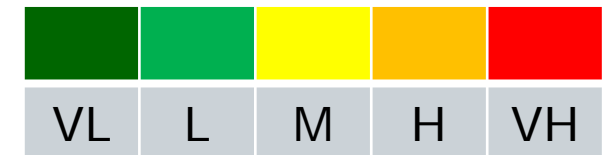
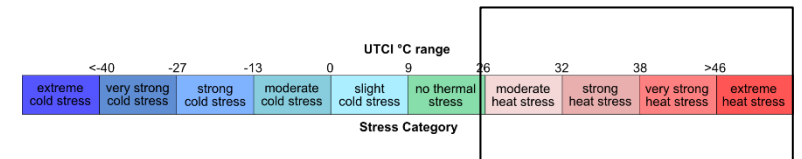
RCP 4.5 2050s



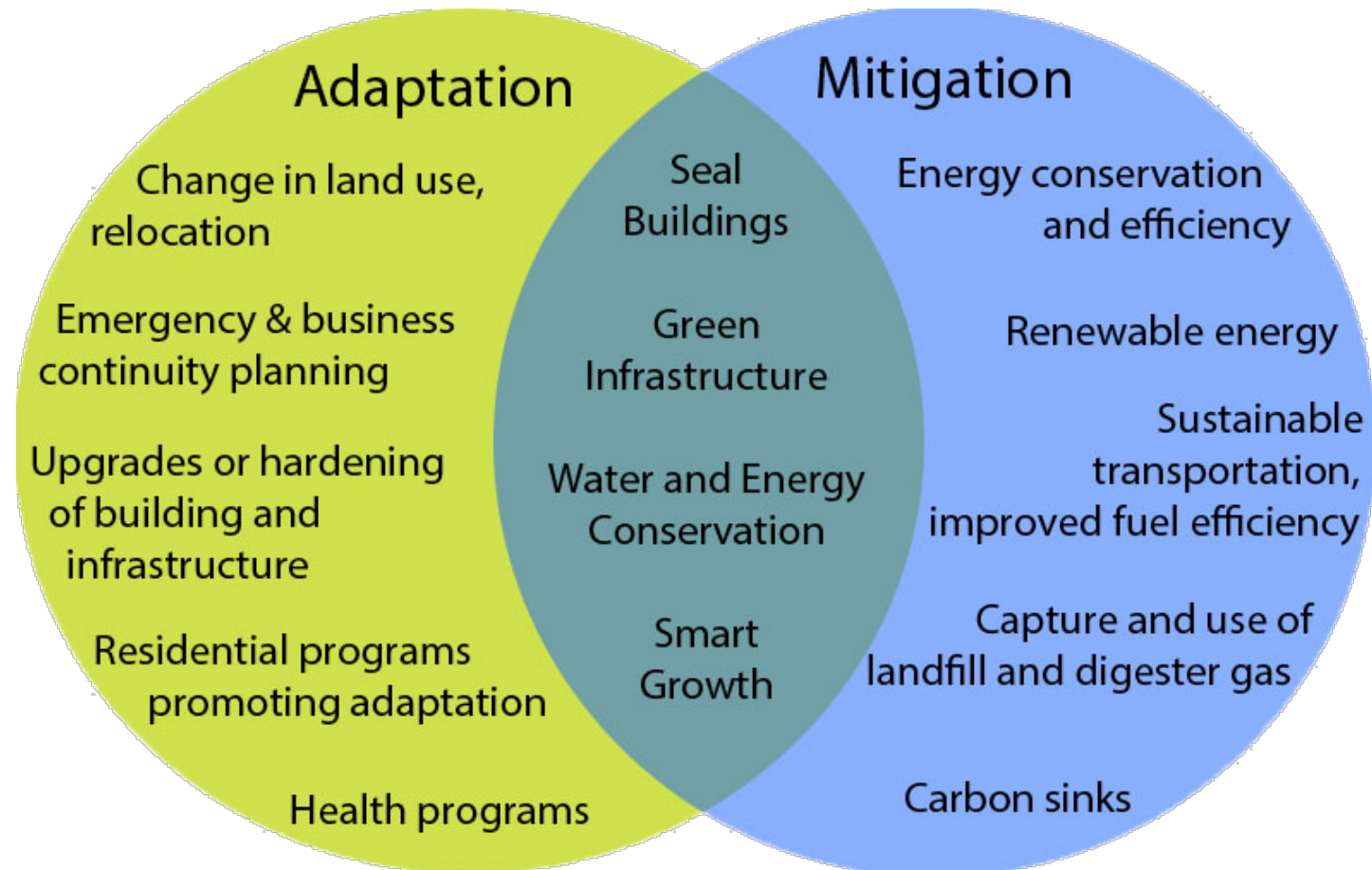
RCP 8.5 2050s



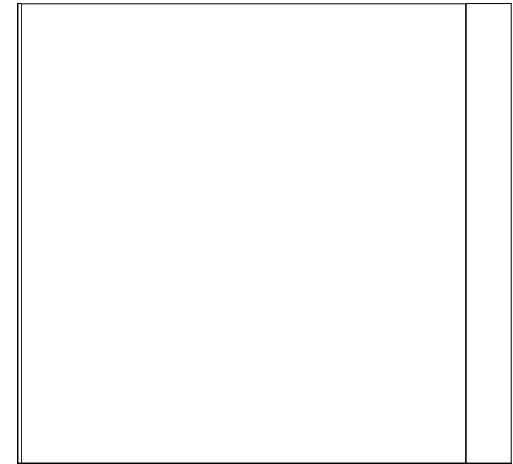
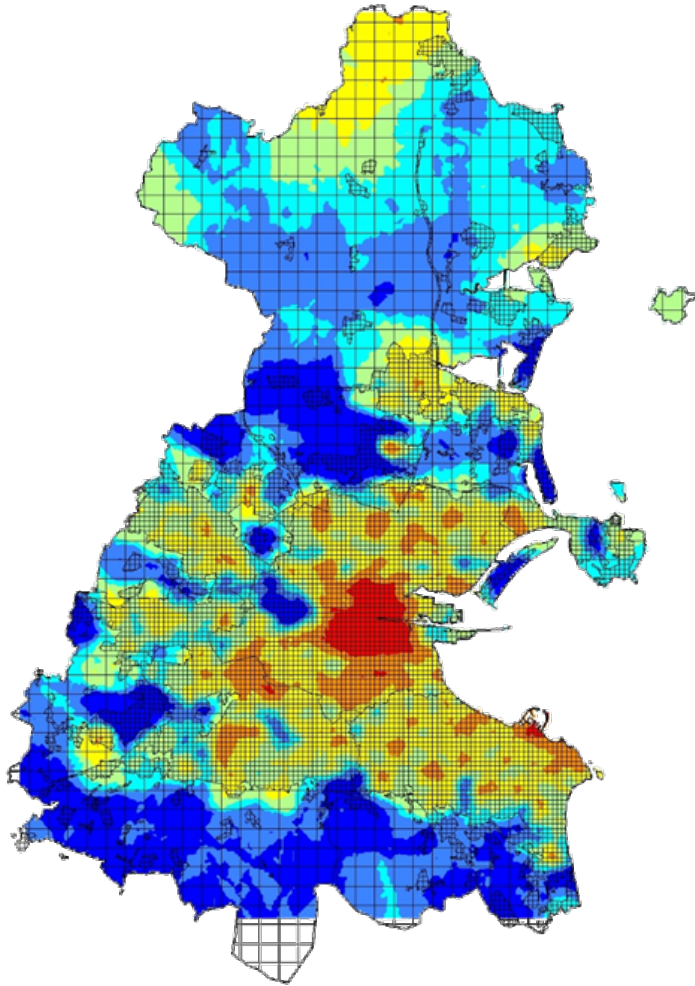
Risk Map for excess thermal Stress Categories



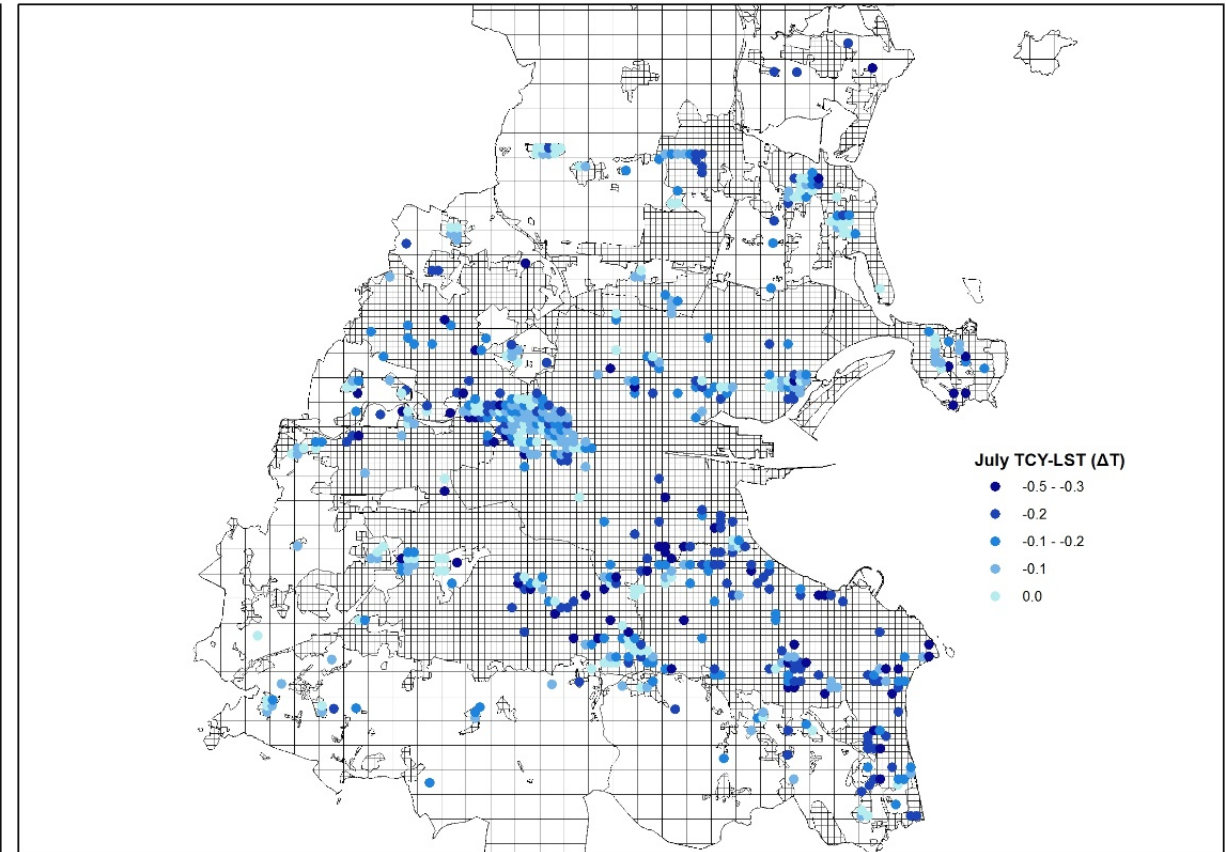
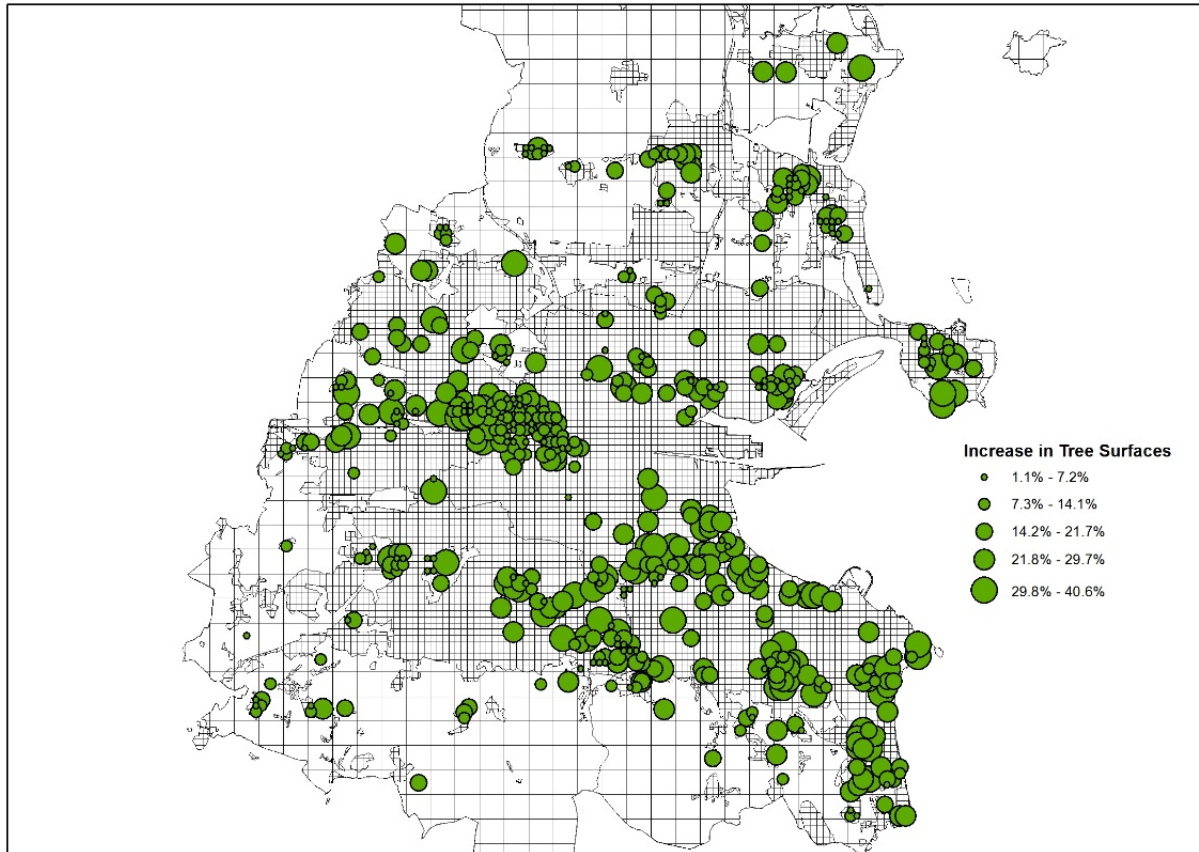
Climate Action and the urban environment: Co-benefits



Climate Action and Cities: Co-benefits



Climate Action and Cities: Co-benefits



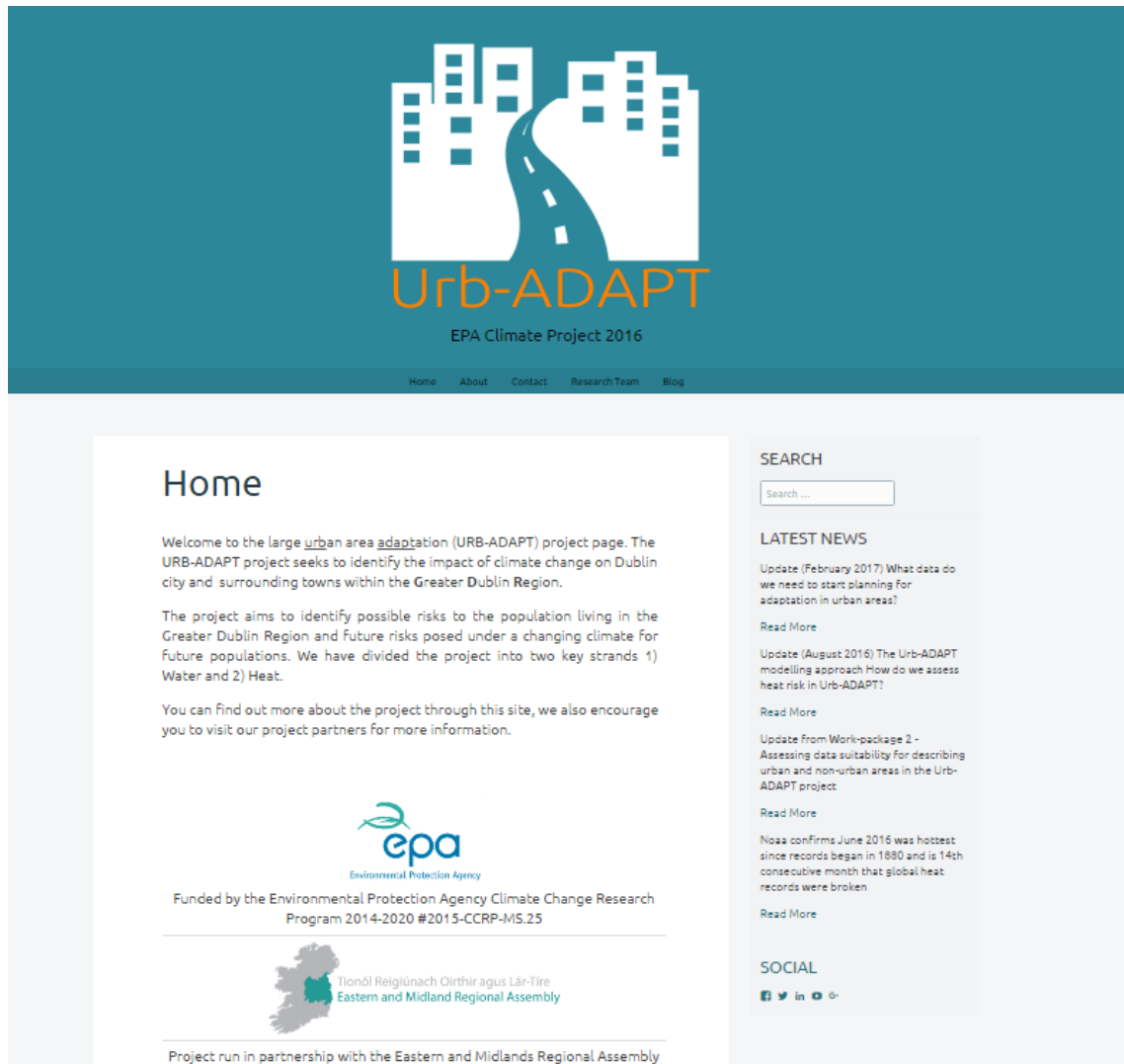
Summary

Protecting the (Urban) Environment for Future Generations

- ❑ Urban population will continue to grow, meaning Urbanisation will continue...
- ❑ The urban environment is (or will shortly become) our primary habitat during the Anthropocene
- ❑ **Therefore, future urban development must take future climate into account (not just flooding!) so as to avoid inadvertent consequences**
- ❑ Adapting the urban environment to climate change can exploit co-benefits



Thank you



- Contact:
paul.alexander@ucc.ie
- For more information and updates on progress, please visit the project website:
www.urbadapt.com
- For information on climate impacts, climate actions and adaptation in Ireland please visit:
www.climateireland.ie

Acknowledgments

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The EPA's current Research Programme 2014–2020 is built around three pillars - Sustainability, Climate and Water.

More information about the EPA Research Programme can be found by visiting the [EPA Website](#) where you can sign up for the quarterly Research Newsletter.

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