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## Climate Change Adaptation in Mediterranean Cities: An Introduction to the Special Issue

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## Climate Change Adaptation in Mediterranean Cities: An Introduction to the Special Issue

Given the highly developed nature of Mediterranean regions and their importance in global trade and migration, it is crucial to develop comprehensive solutions for climate change. The widespread societal impacts of climate change add urgency towards transdisciplinary and transnational solutions for climate change adaptation.

We represent the Mediterranean Climate Change Consortium (MC-4), an international network of scholars, policy makers, and practitioners working towards climate change adaptation in cities with Mediterranean climates. Our proposition is that areas with similar, Mediterranean, climates will have more climate adaptation lessons to share with each other than areas with distinctly different climates. As a step towards this, we present this special issue, which is a collection of articles and practitioner notes focused on climate change adaptation in Mediterranean climate cities. While this issue has a special focus on southern California, we hope these articles serve as a springboard for the discussion of adaptation lessons from other Mediterranean areas. We look forward to highlighting these regions in subsequent issues. We would like to invite other Mediterranean climate change adaptation scholars and professionals to join us in sharing their research and case studies to be collected in this volume.

### Keywords

climate change adaptation, Mediterranean climate, climate networks

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## **CLIMATE CHANGE ADAPTATION IN MEDITERRANEAN CITIES: AN INTRODUCTION TO THE SPECIAL ISSUE**

As we release this special issue of *Cities and the Environment*, “Climate Change in Mediterranean Cities,” global leaders are meeting in Bonn, Germany for COP-23, the UN Framework Convention on Climate Change. We represent the Mediterranean Climate Change Consortium (MC-4), an international network of scholars, policy makers, and practitioners working towards climate change adaptation in cities with Mediterranean climates.

Despite representing less than 3% of the world’s land area, Mediterranean regions are invaluable in terms of resources, infrastructure, and biodiversity. The Mediterranean climate zone encompasses not just areas adjacent to the Mediterranean sea, but also Chile, southwestern Australia, Southern California, and the South African Cape. Mediterranean climates are characterized by hot, dry summers and mild, rainy winters, leaving them vulnerable to a range of climate change impacts. Based upon climate change modeling, these regions are expected to see increased fire events (Moriondo et al. 2006), higher temperatures (Mouillot et al. 2002), and the spread of disease and invasive species (Lejeusne et al. 2010). These impacts will affect resource production, such as lumber (Linder et al. 2010); marine dynamics (Lejeusne et al. 2010); and human wellbeing (Patz et al. 2005). There will also be an increase in severe weather events, including prolonged drought, which will alter crop growing seasons and yield (Ludwig & Asseng 2006). Given the highly developed nature of Mediterranean regions, and their importance in global trade and migration, it is crucial to develop comprehensive solutions for climate change. The widespread societal impacts of climate change add urgency towards transdisciplinary and transnational solutions for climate change adaptation.

However, it is not clear whether solutions developed in one area of the world can translate to areas with different climates and climate change impacts. How much can policymakers and stakeholders in Los Angeles learn from adaptation along the Gulf Coast of Mexico? Our proposition is that areas with similar Mediterranean climates will have more climate adaptation lessons to share with each other than areas with distinctly different climates. For instance, one of our practitioner notes describes how Southern California can learn from Australia’s experience with drought. Drought in a Mediterranean climate with its high fire risks and long, dry, summers likely poses different challenges than drought in a four-season climate; therefore, these lessons are likely to be more transferable than drought experience in a non-Mediterranean climate. These articles represent the first building blocks of an answer to a key adaptation question: Does adaptation knowledge and practice transfer best between geographic areas with similar climates?

The quick pace of climate change, combined with the high cost of adaptation, means that nations, regions, and cities will need to learn from each other’s adaptation experience. Otherwise, they risk costly failures that may have been avoided with more consultation with other places facing similar adaptation challenges. The MC-4 network provides the opportunity to coordinate climate change adaptation efforts across political borders and disciplines to compile resources and knowledge to build solutions. MC-4 works to improve the management of urban climate change impacts and to increase and preserve the social, economic, and environmental health of Mediterranean climate change regions. While MC-4 works in the five specific

Mediterranean climate regions, the methods and ideology exhibited by the network provide a valuable framework for other regions to employ.

The articles and practitioner notes featured in this issue of *CATE* highlight the interconnected nature of climate change. [Locke et al.](#) focus on the climate adaptation strategy of urban forestry, and assess tree canopy change in coastal Los Angeles as it relates to geodemographics and land use. [Brown](#) reviews the fundamentals of urban ecosystems and proposes a framework for comprehensive urban ecosystem management. The practitioner notes present case studies on applying lessons learned from Australia's drought to southern California ([Weinstein Bloome and de Guzman](#)); and engaging Southern California coastal communities in the climate adaptation process ([Newton Mann et al.](#)). In addition to these first released papers, we expect several pending submissions to be published in this volume.

This issue has a special focus on southern California. We hope these articles serve as a springboard for the discussion of adaptation lessons from other Mediterranean areas. We look forward to highlighting these regions in subsequent issues. We would like to invite other Mediterranean climate change adaptation scholars and professionals to join us in sharing their research and case studies to be collected in this volume.

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