

RESEARCH CONNECTIONS

AUSTRALIA

MAKING WAVES: MARINE CITIZEN SCIENCE FOR IMPACT (2017)

Authors Marie-Lise Schläppy, Jennifer Loder, Jodi Salmond, Alexandra Lea, Angela J Dean, Chris M Roelfsema

Abstract The benefit of engaging volunteers in marine citizen science projects goes beyond generation of data and has intrinsic value with regards to community capacity-building and education. Yet, despite the documented benefits of citizen science, there can be barriers to the process of developing strategic citizen science projects and translating data into valued results with natural resource management applications. This paper presents four case-studies from fifteen years of Reef Check Australia (RCA) marine citizen science research and education projects. These case studies convey approaches and lessons-learned from the process of designing, implementing and sharing citizen science programs with the goal to create valuable social and environmental outcomes:

1. Demonstrating citizen science data quality through a precision study on data and analysis of 15 years of standardised Reef Check (RC) reef health data in Queensland, Australia.
2. Identifying and responding to data gaps through volunteer monitoring of sub-tropical rocky reefs in South East Queensland, Australia.
3. Adapting citizen science protocols to enhance capacity building, partnerships and strategic natural resource management applications through reef habitat mapping.
4. Tailoring new pathways for sharing citizen science findings and engaging volunteers with the community via a Reef Check Australia Ambassadors community outreach program.

These case studies offer insights into considerations for developing targeted and flexible citizen science projects, showcasing the work of volunteers and project stakeholders, and collaborating with partners for applications beneficial

to research, management and education.

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Download <https://doi.org/10.3389/fmars.2017.00146>

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CULLING AND CARE: FERALS, INVASIVES AND CONSERVATION ICONS IN AUSTRALIA (2017)

Author Libby Robin
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Abstract The question of problem animals in Australia is often framed in language that has nothing to do with either science or conservation management, but is rather about nationalism and popular culture. The need to attract funding for conservation can often lead to framing problems as 'national', yet caring for nature can be done on many scales, and ecological systems is seldom work on a national scale. This paper considers both ecological scales (regulated by the animal or plant under consideration) and personal scales (scales meaningful to the conservation manager). The idea that only certain sorts of conservationists can 'care' can itself become the problem where conservation groups care, but care differently, and spend time and effort fighting each other, rather than improving ecological outcomes for the animals and plants they care about. Examples discussed include kangaroos in Canberra and cane toads in northern Australia. Changing some inflammatory language and finding more productive uses for the animals culled may enable more inclusive conservation efforts, and engage more hands to help. Macho and military eradication efforts may get in the way of caring for the country, or the animals displaced by invaders. Wasteful practices give conservation a bad name. Better 'metaphors for environmental sustainability' (Larson, 2011) can lead to better outcomes for the environment and for those who care for it. The task of conservation demands more than

science: it is rewarding for many of the people who undertake it. Conservation is an opportunity for service that many volunteers welcome.

Publication *Australian Zoologist* In-Press

Download <http://dx.doi.org/10.7882/AZ.2016.024>

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MANAGING AUSTRALIA'S PEST ANIMALS: A GUIDE TO STRATEGIC PLANNING AND EFFECTIVE MANAGEMENT (2017)

Author Mike Braysher

Abstract The primary focus of the book is on how best to plan and manage pest animals to achieve the desired environmental, economic or social results. It covers a range of topics from history of pest management, current principles underpinning best practice pest animal management, and guidelines for planning and applying strategic pest management approaches to effectively reduce pest damage. (taken from the Preface)

Published CSIRO Publishing, Clayton South VIC

Download Book only. Not available for download. <http://www.publish.csiro.au/>

Price \$49.95

NEW ZEALAND

TRAMPER PERSPECTIVES ON NEW ZEALAND'S GREAT WALKS IN A TIME OF TRANSITION (2017)

Authors Joe Fagan, Robin Kearns

Abstract Great Walks are highly managed multi-day experiences established within New Zealand's national parks. We examine their history and promotion, asking, how has the contexts for recreational walking in the New Zealand wilderness changed? How are these changes regarded by trampers as practitioners of backcountry walking?

To address these questions, we draw on 703 responses to an online survey. We note a mixed regard for Great Walks among trampers. Some consider the wilderness experience as undermined

by the popularity of these branded experiences while others note that they cater for a range of users, despite high costs reducing effective accessibility.

Publication New Zealand Geographer, DOI:10.1111/nzg.12156

Download <http://onlinelibrary.wiley.com/doi/10.1111/nzg.12156/full>

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INTERNATIONAL

CANONS OF SUSTAINABLE ARCHITECTURE AND URBANISM (ND)

Authors Elizabeth Moule, Hank Dittmar, Stefanos Polyzoides

Abstract The Charter of the New Urbanism is the guiding document of the new urbanist movement. Although it offers an encompassing vision of sustainable urbanism from the scale of the region to the block and building, three leading CNU members, including two who had a central role in drafting the original Charter, undertook an effort to clarify and detail the relationship between New Urbanism and sustainability.

The resulting document, The Canons of Sustainable Architecture and Urbanism, is designed to serve as a set of operating principles for

human settlement that reestablish the relationship between the art of building, the making of community and the conservation of our natural world.

The CNU board has adopted the Canons for education, field-testing, and refinement in 2008 and 2009. During this time, members are welcome to sign onto the Canons to show their endorsement of its principles. The first signers are the authors: Elizabeth Moule, Hank Dittmar, and Stefanos Polyzoides, who incorporated comments and suggestions from numerous urbanists.

Published Congress for the New Urbanism website, nd

Download https://www.cnu.org/sites/default/files/Canons_0.pdf

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ADDRESSING CLIMATE CHANGE THROUGH DESIGN: A LAND SYSTEMS SCIENCE APPROACH TO ASSESSING MICROCLIMATE REGULATION IN NEW URBANIST DEVELOPMENTS (2017)

Authors V Kelly Turner and Christopher S Galletti

Abstract (amended) Global urbanisation driven by an ever increasing proportion of the world population residing in cities

contributes to climate change and exposes urban areas and inhabitants to its impacts (Grimm et al. 2008, Seto 2010). Land change—alteration of the composition and configuration of the environment—driven by urbanisation is one of the central ways that cities contribute to the causes and are exposed to the consequences of climate change (Kalnay and Cai 2003, Grimm 2008). Yet, there is great opportunity to intervene in current urban land change trajectories through design interventions that mitigate urban contributions and vulnerability to climate change (Rozenweig et al. 2010, Seto et al. 2010, Childers et al. 2015).

The capacity to address climate change and its impacts through New Urbanist design specifically were recently articulated in the Canons of Sustainable Architecture and Urbanism: A Companion to the Charter of the New Urbanism, which outlines “action-oriented tools” to be “continuously developed and refined” through “information sharing” (Canons 2017). We argue that built examples of New Urbanist design constitute experiments in climate change adaptation and offer important opportunities for empirical study and learning to inform future design. Here we extend well



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developed methods from land systems science, the study of "human-induced transformations of ecosystems and landscapes and the resulting changes in land cover," (Verburg et al. 2013; 433) to develop a method for assessing the temperature regulating potential of New Urbanist design and apply it to Civano, a development in Tucson, Arizona, as a case study.

Published Congress for the New Urbanism, 2017

Download

https://www.cnu.org/sites/default/files/2017_NewUrbanResearch_dressingClimateChangeThroughDesign_TurnerGalletti.pdf

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MODELING THE CLIMATE IMPACTS OF DEPLOYING SOLAR REFLECTIVE COOL PAVEMENTS IN CALIFORNIA CITIES (2017)

Authors Arash Mohegh, Pablo Rosado, Ling Jin, Dev Milltstein, Ronnen Levinson, George Ban-Weiss

Abstract Solar reflective "cool pavements" have been proposed as a potential heat mitigation strategy for cities. However, previous research has not systematically investigated the extent to which cool pavements could reduce urban temperatures. In this study we investigated the climate impacts of widespread deployment of cool pavements in California cities. Using the weather research and forecasting model (WRF), we simulated the current climate of California at 4 km spatial resolution. Comparing this simulation to 105 weather stations in California suggested an overall mean bias (model minus observation) of -0.30°C . Widespread pavement albedo¹ increases of 0.1 and 0.4 in California cities were then simulated. Comparing temperature reductions for each scenario showed that the climate response to pavement albedo modification was nearly linear. Temperature reductions at 14:00 local standard time were found to be 0.32°C per 0.1 increase in grid cell average albedo. Temperature reductions were found to peak in the late morning and evening when boundary layer heights were low, and solar irradiance (late morning) or heat accumulation in the pavement (evening) was high. Summertime temperature reductions were found to be larger than corresponding reductions during winter, as expected. After scaling the results using realistic data-derived urban canyon morphologies and an

offline urban canyon albedo model, annual average surface air temperature reductions from increasing pavement albedo by 0.4 ranged from 0.18°C (Palm Springs) to 0.86°C (San Jose). The variation among cities was due to differences in baseline climate, size of the city, urban fraction, and urban morphology.

Publication Journal of Geophysical Research, Atmospheres, 122, DOI:10.1002/2017JD026845.

Download

<http://onlinelibrary.wiley.com/doi/10.1002/2017JD026845/abstract>

Price \$6-38 (USD)

TRANSFORMING CEMETERIES: A FRAMEWORK FOR ENHANCING ECOSYSTEM PROCESSES AND HUMAN USES IN FORMERLY RURAL URBAN CEMETERIES (2016)

Author Katherine Tromp Van Holst

Abstract The purpose of this research is to document the operational elements used to effectively adapt formerly rural, urban cemeteries into more multi-functional urban open spaces, with expanded ecosystem and passive recreation functions. The goal is to create a transferable framework to guide the process of adaptation of these cemeteries into community open spaces that support ecosystem processes. This project has two motivations:

1. the urban planning problems of inadequate quantities of public open spaces in some cities, and
2. some planners and property owners viewing formerly rural, now urban cemeteries as liabilities due to a lack of perpetual care or the occurrence of anti-social activities.

The method documents the successful adaptation of Eugene Masonic Cemetery, and compares and contrasts it with the Eugene Pioneer Cemetery. Findings show how the Eugene Masonic Cemetery site was transformed from an underused liability to a well-loved community open space, and what elements of its adaptation can be included in a broadly transferable framework to help other communities reach similar goals. Specifically, the research shows how, through sociocultural and biophysical interventions, exotic invasive plant species were replaced with a robust native shrub layer, and how this process improved the cemetery's appeal and the perception of care within the adjacent community. The processes used to transform the Eugene Masonic

Cemetery, and those used maintain and manage the Eugene Pioneer Cemetery, inform the framework for urban cemetery adaptation. This transferable framework can guide managers through the processes of evaluating sociocultural and biophysical conditions, determining desired future conditions, and determining how to progress from the present to desired future conditions through the collaborative creation and implementation of a management plan.

Published University of Oregon, Landscape Architecture Master's Projects, 2016

Download <http://hdl.handle.net/1794/20253>

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EVERYDAY USE OF URBAN CEMETERIES: A NORWEGIAN CASE STUDY (2017)

Authors Katinka H Evensen, Helena Nordh, Margrete Skaar

Abstract The cemetery lay-out is set to meet the need for burying, but Scandinavian cemeteries are often well-maintained greenspaces that could be potentially attractive areas for recreation. Shortage of urban greenspace and changing views on death and funerals could also lead to alterations in use of public urban greenspaces, such as cemeteries. The objective of this study is to explore and describe everyday use of two urban green cemeteries in Oslo and discuss issues concerning designing for multiple and everyday use of urban cemeteries. Systematic moment observations of users' activities were made in the cemeteries. Eighteen types of activities were registered including visiting graves, crossing, biking, walking the dog, and exploration of cultural heritage. The study showed a varied use of both cemeteries and that everyday activities were common. Still, the cemeteries' main function is to serve the grave-visitors with a place to commemorate. In the planning and management of urban cemeteries one will have to take the needs of all its user-groups into consideration in order to keep and develop the particular quality that the cemetery as an urban public greenspace offers to its visitors and the local community. This paper discusses different issues related to various design solutions.

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