Full PhD Scholarship, University of Canterbury

Socio-ecological co-benefits of urban blue-green infrastructure and community resilience

Urban areas face multiple converging social and environmental pressures, and urban planning and management must therefore address complex, interconnected problems and deliver positive outcomes for community wellbeing and social-ecological resilience. With respect to the built environment, some cities have made considerable progress in recent years with the development of 'blue-green' infrastructure for the treatment of storm water and the mitigation of flooding in ways that enhance urban resilience through delivering social and ecological co-benefits at neighbourhood, catchment and city scales. Such spaces include storm water swales, detention and infiltration basins, constructed wetlands, green streets, rain gardens, and other blue and green spaces.

The recent disruption wrought by COVID-19 and subsequent lockdowns highlighted the importance of urban environmental quality and the accessibility of blue-green spaces within walking/biking distance of people's homes for community wellbeing. Similarly as climate change and other disruptions limit travel, urban residents may seek to recreate more regularly within their neighbourhood or city. Finally, local authorities are also grappling with how to give effect to sustainable development in a holistic way at the local scale. Urban blue-green infrastructure has potential to contribute to addressing these challenges, but research is needed to better understand the contribution that these spaces make within our urban communities, including opportunities for recreation, connection to nature and social interactions.

Goals of the PhD research will be defined by the candidate in consultation with the supervisors and research partners (including mana whenua and community partners), but may address:

- The potential role of blue-green infrastructure to support community resilience and wellbeing, through the development of soft infrastructure (social and cultural capital, and engagement);

- Factors influencing co-benefits across multiple temporal and spatial scales (neighbourhood and city spaces, ecological, political and financial planning cycles in relation to wellbeing economics);

- Soft infrastructure requirements (baselines), and pathways for the integration of Indigenous and local knowledge for successful blue-green networks at multiple scales;

- Design criteria (engineering, policy and planning) to optimise social-ecological co-benefits of blue-green infrastructure and community development, sense of place, resilience and wellbeing.

Ideal applicants will have an excellent Masters (or equivalent) in Engineering (civil or natural resources), Human Geography, Environmental Science, Water Resource Management, Planning (or related discipline).

Please send a CV, one-page statement of research vision, and academic transcript to edward.challies@canterbury.ac.nz by **21 May 2021**.

For further information please see the online listing here, or contact edward.challies@canterbury.ac.nz or rita.dionisio@canterbury.ac.nz