Supplementary Submission No 184a

INQUIRY INTO IMPACT OF THE WESTERN HARBOUR TUNNEL AND BEACHES LINK

Name: Name suppressed

Date Received: 18 June 2021

The Western Harbour Tunnel “Concept” and its “intergration” with the Beaches Link Tunnel should be “reviewed”.

The FOLLOWING may be “in-confidence” or “commercial-in-confidence”.

1. The “intergration” of the “Bio-diversity Corridor” (Greener Places Concept) is a challenge?” (intergrating Green Infrastructure with Grey Infrastructure) - “Transport Tunnel solution “ (its a “GREENER PLACES” strategy, that the Chief NSW Govt Architect, Peter Poulet says should be considered as “essential infrastructure”) so using “innovation” to find a “SPACE” to locate an “elevated vegetated roof” over the existing RMS road Corridor “is a challenge?” that can “connect fragmented nearby existing bushland patches’- /(Lower North Shore Bushland Patches).
2. So in assessing the Western Harbour Tunnel and Beaches Link “Grey Infrastructure Project” the “Challenge” to intergrate the “Bio-diversity Corridor” may refer to the “ONSET” project of RMIT University’s Centre for Urban Studies – Current Project – ONSETS.

3. ***Onsets not offsets for real biodiversity gains***

This project will make conceptual and methodological advancements required to develop a working approach for onsets. Case studies in urban development and agriculture will highlight how the approach works in practice.

- *Project dates: 2020–2022*
- *Funding awarded: $473,055*

Project Summary

This ARC Discovery Project addresses the profound challenge of reconciling development and biodiversity conservation by developing an alternative to the pervasive, yet unsuccessful, biodiversity offsetting approach. It will generate new knowledge in the areas of novel ecosystem function, land use optimisation and conservation attitudes. Key project outcomes will be a new framework for biodiversity onsetting, tested against environmental and social feasibility metrics, and new biodiversity evaluation methods for novel habitats. The project will provide environmental and economic benefits by reversing the ongoing decline in biodiversity from habitat loss and driving innovation in environmentally destructive industries that are vulnerable to climate change.

Problem statement

The concept of biodiversity offsetting seeks to facilitate sustainable development, simultaneously achieving both economic development and environmental protection.

However, available evidence points to

1. *the failure of this approach to stem vegetation and biodiversity loss;*
2. *a decline in pro-environmental attitudes in people*
3. *who are exposed to offsetting; and*
4. *declining well-being for people whose connection with nature is compromised by vegetation loss in their local area.*

An alternative approach to sustainable development is needed – we call it 'onsets' – that demands tangible gains from each development by requiring on-site benefits to biodiversity. This project will make conceptual and methodological advancements required to develop a working approach for onsets. Case studies in urban development and agriculture will highlight how the approach works in practice.

Project Aims

1. Deliver innovative new technical methods including:
a. Modelling of spatial and temporal coincidence of high priority species, habitat and ecosystem patterns and processes with land-use activities and schedules
b. Advancing the use of dynamic, multi-criteria spatial prioritisation approaches to identify appropriate property-level development/conservation actions and regional-scale multi-property biodiversity plans
2. Assess the feasibility of effectively implementing an 'onsets' scheme by:
a. Advancing techniques for identifying an 'optimal mechanism mix' for securing onsets, accounting for
current policy and institutional obstacles to effectively implementing onsets
b. Advancing and applying spatially-explicit psychometric methods for assessing the psychological and sociological dimensions of 'conservation opportunity' as they determine where, when and how onsets could be feasibly implemented, including willingness to participate and adopt alternative practices
3. Testing and refining theoretical and technical developments through compelling case studies in two key
development activities (i) urban development, and (ii) agricultural intensification.

Benefit

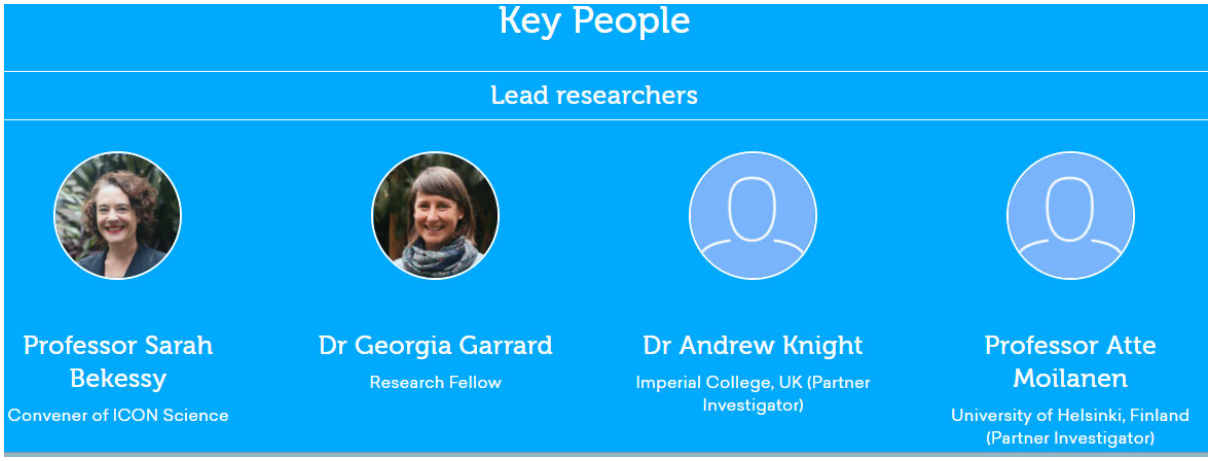
By challenging the unsuccessful but pervasive biodiversity offsetting approach to reconciling economic development and environmental

outcomes, this project will deliver tangible environmental benefits with a substantial legacy. The shift away from off-site, future biodiversity gains and towards on-site gains will assist Australia's ability to meet international obligations, by slowing the decline of biodiversity associated with urban development and agriculture and providing new opportunities for habitat
s and resources in highly modified landscapes. It will provide a framework for true sustainable development which, at its heart, aims to reconcile economic development, human wellbeing and environmental outcomes in a balanced way. This project will contribute to improvements in natural capital reporting and reporting under Sustainable Development Goals 11 (Sustainable Cities & Communities), 12 (Responsible Production and Consumption) and 15 (Life on Land) and help deliver on the Convention on Biological Diversity Aichi Target 12: "By 2020 the extinction of known threatened species has been prevented and their conservation status,
particularly of those most in decline, has been improved and sustained".

Although onsets represent a fundamental shift in policy, it is more economically, operationally and spatially efficient than the status quo. Biodiversity offsetting policies are failing to deliver acceptable biodiversity outcomes, and efforts to improve policies have only decreased capabilities to understand and implement them. A new approach is required.

This project will deliver the methodological innovation and critical stakeholder analysis needed to ensure an effective transition. By enhancing on-site biodiversity, this project has the potential to deliver significant co-benefits for cities and agriculture, such as addressing the urban heat island effect and delivering health and well-being outcomes to residents (Kuo 2015). In the agricultural setting, on-site biodiversity provides significant ecosystem services that, when optimised, can enhance agricultural productivity and increase resilience in the face of extreme weather events. Reduced biodiversity in agricultural areas is currently threatening food security and the livelihoods of rural communities (FAO 2019).

This project has great potential to deliver change and situate Australia as a leader in conservation policy and sustainable development. Australia has been a world-leader in the development of offset policies, but now must lead the way by moving beyond offsets and toward onsets. The research partners and CIs include those who are influential in the design and implementation of offsetting policies internationally, ensuring the project is well placed to not only produce significant new knowledge, but also to inform policy change.



Professor Atte Moilanen has written the Conservation – Maths Tool below with Australian Expert Hugh Possingham

(*researcher biography)*

Hugh is Chief Scientist of The Nature Conservancy, the world's largest environmental non-government organisation. He retains a 20 percent appointment at The University of Queensland and was an ARC Laureate Fellow until the end of 2018. His research interests are in conservation research, operations research and ecology. More specifically, his lab works on problems to secure the world's biological diversity: efficient nature reserve design, habitat reconstruction, monitoring, optimal management of populations for conservation, cost-effective conservation actions for threatened species, pest control and population harvesting, survey methods for detecting bird decline, bird conservation ecology, environmental accounting and metapopulation dynamics.

4.

Spatial Conservation Prioritization

$260.95 AUD

Quantitative Methods and Computational Tools

Atte Moilanen, Kerrie A. Wilson, Hugh Possingham

ISBN: 9780199547760
Binding: Hardback
Published: 15 May 2009
Availability: Contact Customer Service
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Description Contents Authors Reviews

Spatial Conservation Prioritization brings together a team of leading scientists to introduce the conceptual and methodological aspects of how to undertake spatial conservation planning in a quantitative manner. It provides the reader with information on when, why, and how to use which statistical and computational methods for conservation prioritization. Important topics underlying spatial prioritization including metapopulation modelling, population viability analysis modelling, species distribution modelling, and uncertainty analysis are discussed, as well as operational definitions and methods. The book includes chapters on the most widely used and latest software, and concludes with an