3.3. Regional Grant Project Proposal - Urban Rewilding

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ATTACHMENTS: Nil

PURPOSE:

This report details North Sydney Council's support for a regional, multi-partner grant application that seeks to quantify environmental management practice in urban bushland and test the feasibility of urban rewilding.

EXECUTIVE SUMMARY:

Habitat loss and introduced pest species are major threats to Australia's unique wildlife, however to date, conservation efforts with respect to reintroducing wildlife populations have not focused on urban areas, despite the biggest biodiversity losses happening in the green spaces that intersperse our cities. In the northern Sydney region, more than 30 years of restoration effort has been invested by public land managers and local community volunteers to improve the plant-based biodiversity of urban green spaces, upon which our native wildlife species depend. Furthermore, over the past 20 years, public bushland managers including councils, National Parks and Wildlife and other agencies have worked together to implement landscape-scale pest animal management programs, including the Sydney Norther Regional Fox Baiting Program.

Over this period of time, tangible improvements in species diversity and ecosystem health have been observed and documented. However, the level of improvement varies across the region and barriers remain to the ability of particular native wildlife species to recolonize and sustain viable populations in suitable habitat areas.

North Sydney Council has joined with other public bushland managers north of the harbour to support a University of Sydney grant application with the Australian Research Council (ARC) Linkage Program. The grant-funded project seeks to determine whether a bold new approach to conservation – restoring missing fauna – can help bring back local native wildlife and engage local communities to support this form of 'urban rewilding'. New knowledge generated will inform national and global conservation priorities in urban areas and provide a tangible opportunity for community engagement and education in urban conservation.

If funded, the project aims to address the decline and loss of wildlife in urban Sydney, by creating a blueprint for ecological restoration of wildlife in these fragmented landscapes.

Working with seven Councils and three State government agencies in northern Sydney, the project will experimentally assess a new approach to conservation by restoring regionally-present but locally-missing wildlife species. Expected outcomes include the restoration of ecosystem services provided by wildlife, evaluation of community attitudes towards urban wildlife restoration, and targeted community engagement with restoration and nature more broadly.

FINANCIAL IMPLICATIONS:

Funding for this project is included in the adopted 2021/22 budget.

RECOMMENDATION:
1. THAT the report be received.

LINK TO COMMUNITY STRATEGIC PLAN

The relationship with the Community Strategic Plan is as follows:

1. Our Living Environment
1.1 Protected and enhanced natural environment and biodiversity
1.2 North Sydney is sustainable and resilient

BACKGROUND

North Sydney Council has been an active member of the Sydney North Vertebrate Pest Committee (formerly the Urban Feral Animal Action Group) since 2000/01. The regional committee is made up of public land managers, including 11 councils, the National Parks and Wildlife Service and other State Government agencies extending from the harbour northward to the Hawkesbury River, east to the northern beaches and west to Parramatta.

Over the past twenty-two years, the committee has planned and undertaken coordinated pest animal control programs targeting a range of species including the European Wild Rabbit; European Red Fox; feral cats; Common Mynas and new incursion species (i.e. Cane Toads).

The ARC Linkage Grant Project proposal was conceived and supported by the committee in cooperation with academics from Sydney University and ecologists from Taronga Zoo.

If successfully funded, the grant project will be delivered over a three-year period.

CONSULTATION REQUIREMENTS

Community engagement is not required.

DETAIL

The Sydney North Vertebrate Pest Committee have coordinated annual control programs for the European Red Fox across much of the Sydney-north region's public bushland reserves (including National Parks) since the late 1990's/early 2000's. Initially, fox control programs were carried out four times per year, however this was later reduced to twice annually in order to balance the impact of bushland reserve closures (to leashed dog walking) with efficacy of fox population suppression, which can be achieved through coordinated control programs timed to occur during autumn and spring – critical times in the biology of fox behaviour as well as for native species vulnerable to fox predation.

North Sydney Council has consistently participated in these fox control programs since 2007, with twice-annual baiting programs in Balls Head Reserve (Waverton) and Berry Island/Badangi Reserve (Wollstonecraft). Our neighbouring Councils of Willoughby and Lane Cove also participate in these programs, contributing to the ongoing suppression of fox density in the lower north shore area.

Since the mid 1990's, North Sydney Council (along with many other LGAs) began supporting the development of Bushcare programs – engaging local communities to care for their bushland reserves and contribute to the rehabilitation of these invaluable assets. The growth of these volunteer programs helped to broaden the profile of bushland conservation at the local level, as well as increase community understanding and valuing of urban bushland remnants.

This in-turn drove continued investment in the rehabilitation management of Council's bushland reserves, setting them on a course of careful ecosystem restoration that has seen the health, condition and species diversity of North Sydney's bushland reserves steadily improve.

Anecdotally, we know that this ongoing commitment to bushland rehabilitation, combined with landscape-scale pest management, is having a positive environmental outcome for vulnerable native wildlife species. For example, over the past decade there has been a gradual recolonisation of bushland reserves in Cammeray/Cremorne by Long-nosed Bandicoots; Swamp Wallabies and Superb Lyrebirds moving southward through the Middle Harbour green belt, from their population strongholds in Garigal National Park and beyond. More recently (2018/19), Long-nosed Bandicoots were also recorded for the first time in Badangi Reserve, Wollstonecraft, indicating natural migration through the Gore Cove wildlife corridor from habitats in the Lane Cove LGA.

However, these observed fauna recoveries and their connection to sustained bushland rehabilitation work/regional pest management over the past 20-30 years have not been formally quantified to-date through vigorous scientific research. This data-gap provides an opportunity to investigate and quantify the influence of landscape-scale, cross land-tenure coordinated environmental management on the natural recovery of certain wildlife species.

In order to address this knowledge gap, as well as investigate the feasibility of enhancing fauna recovery in urban bushland, The SNVPC have partnered with the University of Sydney to apply for grant funding under the Australian Research Council's ARC Linkage Program. The grant application, which has been led by a team of academics working in collaboration with the SNVPC member organisations, seeks to identify the relationship between bushland rehabilitation; fox control and wildlife recovery within the Sydney-north region as well as identifying suitable locations for – and trialling – the reintroduction of specific native wildlife species that are missing from the landscape, but known to occur historically.

If successful, the 3-year grant-funded study will focus on 4 main objectives:

1. **Learning from the past** – researchers will consolidate historical fauna records held by participating SNVPC member organisations (including NSC) as well as those in public databases such as the Atlas of Living Australia and BioNet in order to quantify where species have declined, disappeared or returned to particular areas. This information will be compared against fox control data held by SNVPC members, as well as details of bushland rehabilitation activities carried out by the member organisations over the past 20-30 years. Lastly, in looking at this data at the landscape-scale, researchers will seek to identify suitable sites within the Sydney-north region for potential native species reintroductions.

2. **Design of Restoration Plans** – based on the outcome of the above research phase, targeted ecological surveys will be undertaken at selected urban reserves predicted to be suitable for species reintroductions (also known as "rewilding"). During ecological surveys, researchers will identify threats to rewilding, by assessing habitat complexity, reserve size, presence of native versus introduced plant species, presence of red foxes and/or feral/domestic cats, level of connectedness, and level of human activity/development. Consideration will be given to ecosystem services that are likely missing from the surveyed reserves e.g. pollination, seed dispersal or soil digging, to inform what role rewilding wildlife could play in restoring ecosystem services that humans cannot replicate.

   The research team aim to engage with traditional owners and local residents living near five urban bushland reserves in order to gain an understanding of perceptions, values and expectations of urban biodiversity, conservation management priorities and the concepts of rewilding.

   Based on the above findings, species restoration plans will be developed for five native species that are regionally common but have been lost from much or our urban green-web of remnant bushland. The species are likely to be selected based on their suitability for translocation/reintroduction; habitat requirements/sensitivity; role in ecosystem functions and population response to predator management etc. It is expected that the species candidates will include the native Bush Rat; Eastern Pygmy Possum; Long-nosed Bandicoot; Eastern Water Dragon; Eastern Blue-tongue Lizard and the Superb Lyre Bird.

3. **Experimentally test the reintroduction plan** – following the approval pathway for translocating native species, the reintroduction theory will be tested for each of the five selected species in specially selected recipient sites located within the SNVPC member agency region. Monitoring of the reintroduced individuals will occur immediately post-release and at regular intervals thereafter. Citizen scientists will be engaged to assist with passive field monitoring and data analysis, whilst follow-up surveys of local residents/bushland reserve neighbours to measure any change in perceptions, values and expectations that are attributable to the project.

4. **Empower the future** – twelve months after the initial species releases, targeted trapping and tracking surveys will be conducted to check all caught individuals for microchips to determine whether they are part of the original release cohort; are juveniles resulting from successful breeding; or reflective of changes in movement patterns. DNA testing of trapped individuals will provide an insight into the breeding characteristics of the translocated cohort and whether genetic variation is sufficient to form the basis of a viable, robust population.

A detailed analysis of the data gathered, both in stage 4 of the project and in the earlier stages, will guide the development of evidence-based policy advice for urban bushland managers. This advice will take shape through specific, targeted evidence-based recommendations for the rewilding of self-sustaining populations of locally missing species, and to guide ongoing community engagement with local biodiversity conservation. Importantly, the results and experiences will provide protocols to communicate with the public about future rewilding opportunities and develop repeatable surveys that can gauge the impact of rewilding on community knowledge and conservation values. The expected outcome; an ecologically-informed communication and community survey strategy for SNVPC member organisations to help guide rewilding efforts into the future, providing a pathway to embed evidence-based wildlife restoration approaches into relevant bushland management and biodiversity recovery policy.

Should the grant application be successful, North Sydney Council's Bushland Management Team will provide in-kind support through the provision of monitoring data; access to ecological reports and a cash contribution of $5,000 per annum funded from existing wildlife monitoring budget allocation under the Environmental Levy.