

# ECOLOGICAL INPUT FOR TĀMAKI ESTUARY NIGHT-TIME SHOREBIRD SURVEY DESIGN AND FIELDWORK

18 April 2018

## INTRODUCTION

The Tāmaki Estuary is an important feeding ground for a range of shorebird species, although it lacks suitable roosting areas where shorebirds can roost undisturbed by people and dogs during the high tide period. Disturbance is a particular concern at night when shorebirds are more vulnerable to predation. A survey has been proposed to determine the species and numbers of shorebirds roosting within the Tāmaki Estuary, and to map where roosting is occurring. To this end, Auckland Council has asked Wildland Consultants Ltd to provide a fee proposal for technical advice and support for this survey. Costs have been requested to:

1. Meet with Shaun Lee and Tāmaki Estuary Environmental Forum members in Glen Innes to discuss objectives of the project and possible methods which could be employed.
2. Assist with the design of a survey methodology that could be undertaken by volunteers.
3. Possible assistance during the survey night(s).

## METHODS

Following the initial meeting with Shaun Lee and Tāmaki Estuary Environmental Forum members, a draft survey design will be prepared, which will include:

- Literature review detailing existing knowledge of high tide roost sites around the Tāmaki Estuary.
- Maps of suggested survey locations, including brief descriptions.
- A survey methodology that is suitable to be undertaken by volunteers.

Following provision of a draft document, a second meeting will be held to discuss the proposed survey methodology (if required). Any suggested changes will be incorporated into the final version.

If required, Wildlands will provide a suitably experienced ecologist to assist with survey fieldwork.

## PROJECT TEAM

Wildland Consultants Ltd will provide a team of experienced ecologists to assist with the design and implementation of a night roost shorebird survey. **Dr Jamie MacKay** will lead the project and avifauna specialist **Dr Rachel McClellan** will provide technical advice regarding survey methodology. **Nick Goldwater** will provide project oversight and technical advice regarding the Tāmaki Estuary.

### **Dr Jamie MacKay – Senior Ecologist**

Wildland Consultants Ltd - Auckland

Jamie MacKay joined Wildlands in March 2014 as a fauna ecologist specialising in the management of pest mammal species. Jamie completed a PhD at the University of Auckland in 2011 and he has a strong, internationally recognised, publication record in the field of pest mammal management in New Zealand. Since joining Wildlands, Jamie has designed pest mammal management plans for a range of sites on both public and private land around the Auckland Region, and has undertaken a large number of vegetation surveys in a range of ecosystems for environmental impact assessments and baseline biodiversity surveys including the establishment of recce plots for permanent vegetation monitoring. In addition to pest mammal expertise, Jamie also has a large amount of experience with indigenous fauna including writing and implementing management and translocation plans for fish and lizards, surveys for forest and wetland birds, and bird banding for research projects.

Jamie has worked on a range of projects involving bird handling in the UK, USA and New Zealand. He is experienced at setting mist nets for forest birds and waders, and is experienced at extracting birds from mist nets and cannon nets. In 2011, Jamie worked for several months at a MAPS (Monitoring Avian Productivity and Survivorship) programme station in Pennsylvania, USA, catching, measuring, and banding a wide range of resident and migratory bird species. Other projects involving mist netting include catching North Island saddleback (tīeke) on Mokoia Island, Rotorua for disease screening, colour-banding whiteheads (pōpokotea) on Tiritiri Matangi Island, and banding swallows and reed warblers in reed beds in Norfolk, UK. Jamie assisted in catching New Zealand storm petrels at sea in 2008 using a modified cannon net and is a registered Level 2 bird bander for burrowing seabirds, a qualification gained during involvement in several long-term grey-faced petrel (ōi) monitoring projects.

### **Dr Rachel McClellan – Principal Avifauna Ecologist**

Wildland Consultants Ltd - Wellington

Rachel has been with Wildlands since 2009, and has undertaken avifauna work around New Zealand, including survey and monitoring, assessment of effects, environment court work, threatened species monitoring and management, ecological significance criteria development, and strategic and restoration plan development and implementation. Rachel has worked extensively on wind farm projects, including development of robust bird and bat blade strike monitoring programmes. She has prepared expert evidence on a number of cases including proposed coastal subdivisions, mining applications, wind farms, hydropower proposals, district plan changes, mussel farms, and the removal of the Rena wreck.

Rachel completed a PhD on the ecology and management of the threatened black-billed gull (tarāpuka) in Southland which included investigating population trends, the impacts of introduced and native predators, the threat of weed infestation on gravel-bedded rivers, and the species' relationship with agricultural ecosystems. She has also completed a Master of Conservation Science, undertaking research on the breeding biology of the flesh-footed shearwater (toanui) on Karewa Island, Bay of Plenty, and the feasibility of recommencing traditional harvesting. Rachel has worked in England where she was part of a team that wrote BirdLife International's 'Threatened Birds of the World'.

## **Nick Goldwater - Principal Ecologist**

Wildland Consultants Ltd - Auckland

Nick Goldwater is an experienced ecologist based at our Auckland office. He has completed an MSc (1<sup>st</sup> Class Honours) at the University of Auckland, studying the ecology of feral mice at the Tawharanui Open Sanctuary. Nick has a sound knowledge of indigenous and exotic plant species, and also has considerable experience in vertebrate pest management. Nick carried out field work for and was the first author on Protected Natural Areas Programme reports for Tangihua, Rodney (Northland), and Manaia Ecological Districts in Northland. He has undertaken several other large natural area surveys and assessments, including natural areas in plantation forests in Whangarei, Cape Reinga and the Hawke's Bay Region. In Auckland, Nick has undertaken many Assessments of Ecological Effects for proposed roads, powerline routes, subdivisions, cleanfills, quarry expansions and developments that have involved extensive vegetation mapping and terrestrial, wetland and aquatic fauna surveys, as well as the survey and capture of indigenous lizards. Nick has prepared evidence for and attended hearings at Council and Environment Court, and he has appeared before the Auckland Council Independent Hearings Panel as an expert witness with regards to the management of vegetation and earthworks in natural habitats.

Nick has previously undertaken surveys of shorebirds and migratory wading species in the Omaha Estuary, and he is familiar with the intertidal habitats in the Tāmaki Estuary. Nick recently peer reviewed an ecological assessment of the proposed Tāmaki Pathway for Auckland Council, which included consideration of roosting sites for species such as oystercatcher and New Zealand dotterel. Nick has undertaken several desktop reviews on the distribution and abundance of shorebirds around the Auckland region, including the Waiuku Estuary and Mahurangi Harbour. He is familiar with all the bird species that are likely to be present in the Tāmaki Estuary.

## **TIMEFRAME**

Wildlands can meet the time requirements of the client. The survey design will be provided within ten working days of the initial meeting.

## COSTS

### Meeting with Shaun Lee and the Tāmaki Estuary Environmental Forum

Professional fees		405.00
Disbursements:		
- Mileage (24 km @ \$0.78/km)	18.72	
	_____	18.72
		_____
		423.72
Goods and Services Tax		63.56
		_____
		\$487.28
		_____

Note: Costs allow for a two-hour meeting plus one hour of travel. Further time will be charged at \$135 per hour (excluding GST, i.e. \$155.20 including GST) plus disbursements.

### Development of a survey design methodology

Professional fees		2,615.00
Disbursements:		
- Mileage (24 km @ \$0.78/km)	18.72	
	_____	18.72
		_____
		2,633.72
Goods and Services Tax		395.06
		_____
		\$3,028.78
		_____

Note: Costs allow for one two-hour meeting plus one hour of travel following provision of the draft report and one report revision incorporating client comments. Further time will be charged at \$135 per hour (excluding GST, i.e. \$155.20 including GST) plus disbursements.

### Assistance with night surveys

This work will be undertaken on an hourly rate basis charged at \$110 per hour (excluding GST, i.e. \$126.50 including GST) plus disbursements.