

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of a submission in respect of the **PROPOSED WAIKATO DISTRICT PLAN** by **AMBURY PROPERTIES LIMITED** pursuant to Clause 6 of Schedule 1 of the Act to rezone 178ha of land at Ohinewai

STATEMENT OF REBUTTAL EVIDENCE OF CHAD CROFT

1. INTRODUCTION

- 1.1 My name is Chad Croft. I am a Principal Ecologist at Ecology New Zealand Ltd.
- 1.2 I have outlined my qualifications, experience and commitment to comply with the Environment Court Expert Witness Code of Conduct in my evidence in chief ("EIC").
- 1.3 I have read the statements of evidence of David Klee on behalf of Fish and Game, and Thomas Wilding on behalf of Waikato Regional Council in relation to ecology-related issues.

Purpose and scope of rebuttal evidence

- 1.4 The purpose of this statement of rebuttal evidence is to address Mr Klee's concerns about the adequacy of the proposed design for a predator control programme ("PCP") aimed at contributing to the restoration and enhancement of indigenous biodiversity within the site (and therefore indirectly within the adjacent Rotokawau Reserve).
- 1.5 Specifically, I address the following:

- (a) Whether the proposed plan provisions relating to predator control provide adequate certainty that any potential adverse effects will be appropriately managed (Section 2);
- (b) The extent to which a lethal control programme is adequate for the control of domestic cats (Section 3); and
- (c) The uncertainty of 'no cat' covenants (Section 4).

2. **PREPARATION OF PREDATOR CONTROL PROGRAMME**

2.1 During expert conferencing, it was agreed that:¹

"... a well designed and implemented predator and pest control operation could be beneficial to the wetlands that form part of the development and Rotokawau reserve. There was an acknowledgment that the risk of domestic cats being affected by predator control could sit with adjacent landowners.

Agreement was not reached during conferencing on the details of the nature or framework of the controls relating to the potential for cat predation. This was due to the following:

(a) There are a number of options available and it was decided a discussion outside of the conferencing would be appropriate.

(b) Instruction is needed from Ambury Properties Limited on any options discussion.

2.2 Since that time, APL has been working on the development of a conceptual PCP and has shared two versions of a draft with Mr Klee. Unfortunately, only limited feedback has been received from Mr Klee and I was unaware until I received his statement of evidence of Mr Klee's view that lethal control measures for domestic cats would not be adequate. This matter is addressed in Section 3 below.

2.3 In any event, APL remains willing to work with Mr Klee on the details of a framework for PCP over the coming weeks prior to the hearing of APL's submission.

1 Ecology Joint Witness Statement paragraph 3.11.

2.4 Rule 16.6.3 RD5(d) outlined in Mr. John Olliver's rebuttal evidence, requires the development and implementation of an Ecological Rehabilitation and Management Plan ("ERMP"). The ERMP is required to contain PCP that will include:

- (a) an overarching goal of contributing to the restoration and enhancement of indigenous biodiversity within the site and therefore indirectly within the adjacent Rotokawau Reserve;
- (b) objectives of increasing Ohinewai Structure Plan occupants' awareness of predator threats, and the need for predator control, including control of domestic cats and dogs, to reduce the threat of predation on indigenous fauna;
- (c) a predator control strategy designed to achieve the above objectives; and
- (d) a monitoring programme to ensure the objectives are being achieved and predator populations are being suppressed sufficiently to achieve biodiversity gains.

2.5 APL has prepared a draft PCP (attached as **Attachment A**) which aims to fulfil the requirements of Rule 16.6.3 RD5(d) by focusing on the following:

- (a) Strategies to mitigate foreseeable threats to indigenous fauna attributable to the introduction of domestic cats as part of the proposed residential development of the site by ensuring the relative abundance of cats within the PCP area is maintained at a residual trap catch of $\leq 5\%$;
- (b) Strategies to reduce the threat of predation on indigenous fauna by mammalian predators in general by ensuring the relative abundance of ferrets, stoats, and possums within the PCP area is maintained at a residual trap catch of $\leq 5\%$ and the relative abundance of rats within the PCP is maintained at a tracking rate of $\leq 5\%$; and
- (c) Strategies to increase public awareness and support for predator control activities by ensuring 90% of Sleepyhead Estate residents are engaged and support the PCP by 2030.

3. **APPROPRIATENESS OF THE PREDATOR CONTROL PROGRAMME**

3.1 At paragraph 5.27 of his evidence, Mr Klee has suggested that all details of the PCP should be finalised at this rezoning stage of the development.

3.2 I do not agree that it is necessary or appropriate for a complete detailed predator control framework to be finalised at this stage, given the temporal dynamics between the plan change decision, resource consenting and any potential development. Predator control is a rapidly advancing field and many new technologies and innovations are becoming available such as new traps, new lures and increased understanding of predator-prey dynamics in peri-urban environments.

3.3 In addition, developmental design of the site will have a significant influence on site specific conditions and potential habitat for both prey and predators. Consequently, locking in specific design and implementation details at this stage would in my opinion be premature. In particular, the opportunities to partner with other interested parties in a collaborative landscape approach may be limited if APL is forced to deliver on a specific programme designed without prior knowledge of development design conditions, or baseline prey and predator populations.

3.4 Certainty in managing ecosystem dynamics is illusive. Specifically, at a planning stage when there are many variables which cannot be accounted for to a level of precision required to move any specific tactic in the management of predators towards a certain outcome. The conceptual PCP prepared by APL reflects a general understanding of the predator-prey dynamics of the site and surrounding area and the opportunity to refine and adapt a PCP best suited to the design conditions and predator-prey populations at the time of implementation.

Lethal control of domestic cats

3.5 At paragraph 5.18, Mr Klee suggests that relying on lethal control for the control of domestic cats is “problematic” because cats are less likely than other species to be attracted to bait. I do not agree with that assertion.

3.6 New Zealand is a global leader in the innovation, design and implementation of lethal PCPs. Lethal control of domestic cats

specifically, has been largely untested in New Zealand due to political and social conflicts and the absence of national legislation (Metsers et. al 2010²). However, lethal control of cats, including feral and stray cats has been successfully carried out by the Department of Conservation (“DOC”), Regional Councils, private land owners and private trapping groups for a long time using humane best practice techniques (NCMSG 2016³; Clapperton et. al 1992⁴).

- 3.7 It is well understood that predator prey dynamics in general, and cat ecology specifically, is complex. There is ongoing and inherent uncertainty associated with anthropogenic intervention in predator prey relationships (Does removing cats increase rat populations? Does the presence of domestic cats and dogs change the roaming and hunting behaviours of feral cats, mustelids or rats?). Consequently, APL has proposed a comprehensive lethal PCP which targets not only cats, but rats, possums, and mustelids.
- 3.8 While cats are known to prey on both exotic and indigenous birds, Mr. Klee’s suggestion that cats prefer birds within forest fragments is an oversimplification. As discussed above, predator prey dynamics and cat ecology is complex and while Van Heezik et al. (2010⁵) found cats brought back a higher proportion of bird prey in an urban garden setting, Mesers et al. (2010) found that cats showed a preference for rodents across a range of both rural and urban fringe and Morgan (2002⁶) found cats brought back 38% rodents, 19% exotic birds, and 1% indigenous birds from urban areas surrounding wetland habitat. Cat prey selection and abundance is highly variable and dependent on a number of factors such as cat and prey density, habitat characteristics, abundance of cover, amount of supplementary food available etc.

Spatial scale of lethal control

- 3.9 Domestic cats living on the edge of residential developments have been shown to have much smaller home ranges than rural stray or feral cats

² Metsers, E.M. et al 2010 Cat-exclusion zones in rural and urban-fringe landscapes: how large would they have to be? *Wildlife Research*, ,37,47–56

³ National Cat Management Strategy Group (NCMSG), 2016 Draft National Cat Management Strategy Background Document 21st September 2016

⁴ Clapperton B.K., R.J. Pierce, and C.T. Eason 1992 Experimental eradication of feral cats (*Felis catus*), from Matakoho (Limestone) Island, Whangarei Harbour, Wellington, N.Z. : Head Office, Dept. of Conservation, c1992. 1 v. (Science research series, 0113-3713 ; no. 54)

⁵ Van Heezik et al. 2010., Do domestic cats impose an unsustainable harvest on urban bird populations? *Biological Conservation* 143 (2010) 121–130

⁶ Morgan, S.A, 2002 Movement and Hunting Activity of House Cats(*Felis Catus*) Living Around Travis Wetland, Christchurch, New Zealand, Msc. Thesis, Lincoln University

(Metsers et. al 2010; Morgan 2002). The hypothesis is that home range size is a reflection of cat density (Van Heezik et al. 2010, Metsers et. al 2010; Morgan 2002). In populated areas where food is abundant through supplementary feeding, territorial behaviour is less prevalent and home ranges are reduced (Metsers et. al 2010). Morgan (2002) found that domestic cat home ranges varied from 0.1ha-10.1ha with maximum cat movements ranging from 29m to 280m from home. In addition, Morgan (2002) found that the deepest cat penetration of a neighbouring wetland was 198m with the majority of cat movement restricted to the perimeter of the wetland.

- 3.10 While no specific behavioural traits can be attributable to any one group of cats with certainty, the expectation is a PCP aimed at controlling domestic cats and other peripheral predators can be local in scale and still be effective at achieving the overall objective.
- 3.11 A similar scaled PCP was developed for the Matahuru Papakainga wetland restoration project (Kessels 2015⁷) located adjacent to Lake Waikere, directly east of the OSP area. This pest animal control programme targeted the same predators and utilised the same best practice techniques in terms of trap density, trap types and performance measures as those proposed by APL.
- 3.12 It is to be noted that the conceptual design of the PCP prepared by APL is reflective of a willingness for a collaborative approach to landscape scale predator control around Lake Rotokawau. It is expected that the final design and specific implementation details of an OSP PCP could be altered or adapted to be consistent and or complementary to any program that may be designed and undertaken by other interested parties such as DOC, Tangata Whenua or community groups on adjacent lands.

4. **'NO CAT' COVENANTS**

- 4.1 Land or conservation covenants are a popular mechanism for controlling or excluding land development activities in New Zealand. Covenants are generally paper based, administrative mechanisms not tied to on-the-ground actions.

⁷ Kessels Ecology, 2015, Nikau Estate Trust & Matahuru Papakainga Marae, Ecological Restoration Plan, Lake Waikere, Waikato

- 4.2 No cat covenants are a specific administrative mechanism aimed at excluding cats from a particular area usually as part of subdivision consent conditions and based on detailed assessment of effects done at resource consent stage.
- 4.3 The use of administrative mechanisms for the purpose of conservation (e.g. no cat covenants) can produce ecological gains; however, they are far from certain in their outcomes. Administrative controls aimed at individual landowner behaviour specifically can be difficult to monitor and ensure compliance. In the absence of compliance with a no-cat covenant, cats may be introduced to the OSP area with no controls in place to manage their potential effects on native fauna.
- 4.4 In addition, a no-cat ban would likely require a landscape wide cat control management regime to be implemented in order to be effective and protect against future surrounding development and the associated potential cat ingress.
- 4.5 In my opinion, native fauna disturbance by cats is most appropriately mitigated through increasing 'safe sites' in the area through the implementation of a predator control area.
- 4.6 In addition, implementation of a lethal PCP targeting high value habitats (on site) would likely alleviate the effects of domestic cat predation by reducing the effects of other highly fecund and likely abundant predator species.

Chad Croft

24 August 2020

ATTACHMENT A
DRAFT PREDATOR CONTROL PROGRAMME