



# APPLICATION FORM

## MODIFIED REASSESSMENT

# Application for a Modified Reassessment

under section 63A of the Hazardous Substances and New Organisms Act 1996

Send by post to: Environmental Protection Authority, Private Bag 63002, Wellington 6140  
OR email to: [HSApplications@epa.govt.nz](mailto:HSApplications@epa.govt.nz)

**Name of substance(s):**

PredaSTOP™ for feral cats containing 410g/kg PAPP (Para-aminopropiophenone)

**Applicant:**

Connovation Ltd

**Date:**

19/09/2017

**APPLICANT CHECKLIST**

- Mandatory sections filled out
- Appendices enclosed
- Fees enclosed
- Signed and dated

**OFFICE USE ONLY**

Application code

Date received

EPA contact

Initial fees paid \$

Application version no.

## 1. Applicant details

### 1.1. Name and postal address in New Zealand of the organisation making the application

Name: Connovation Ltd  
Address: 36B Sir William Ave, East Tamaki, Auckland  
Phone: 09 273 4333  
Fax: 09 273 4334  
Email: duncan@connovation.co.nz

### 1.2. The applicant's location address in New Zealand (if different from above)

Name:  
Address:  
Phone:  
Fax:  
Email:

### 1.3. Name of the contact person for the application

Name: Lee Shapiro  
Position: Consultant  
Phone: 0272734342  
Fax:  
Email: lee.shapiro@boffamiskell.co.nz

## 2. Type of application

### 2.1. The approvals being reassessed

The approval to be reassessed is for HSR100494 and HSR100496 collectively referred to as PredaSTOP™ (also referred to as PAPP Paste A and PAPP Ready to use Bait). PredaSTOP™ is a low residue toxin for controlling feral cats and stoats. When used to control feral cats, end users must notify any landowner within 3 km of a feral cat control operation. No notification is required for stoat control with PredaSTOP™.

### 2.2. Specific aspect of the approval being reassessed

Currently, users are required to notify any landowner within 3 km of a feral cat control operation when using PredaSTOP™.

### 2.3. Grounds for the reassessment

The Decision Making Committee for application APP202060 (“the Committee”) determined that grounds for the modified reassessment of approvals for PredaSTOP™ exist. The Committee considered that the applicant’s proposal is not minor or technical in effect and that the reasons for the proposed modifications met the criteria set out under the Act and constituted grounds for a reassessment.

In reaching its decision the Committee decided:

- 1) The legislative basis to undertake a modified reassessment is that significant new information relating to the effects of the substances exists.
- 2) Information showing a significant change of use, or a significant change in the quantity manufactured, imported, or developed has become available.

The Committee had no concerns from a Māori perspective regarding the applicant’s wish to determine whether there are grounds for the modified reassessment of PredaSTOP™.

### 2.4. Consultation

Extensive dialogue with the Department of Conservation (DOC), Regional Councils and pest control contractors has highlighted that the current notifications for PredaSTOP™ for feral cats has effectively made this product unusable. Once PredaSTOP™ was approved for use, a large number of practitioners from DOC, Regional Councils, community groups and private contractors paid to update their Controlled Substance Licences to include PAPP. This was due

to the potential that this tool has to really boost the ability to control feral cats and stoats and amplify native species protection. The notification requirement has now been removed for stoats however the notification for feral cats remains and the overwhelming feedback from practitioners has indicated that the existing notification requirement for feral cats makes its use unfeasible for feral cat control.

The development of PredaSTOP™ for stoats and feral cats, as well as the ongoing research into the extension of its use in a resettable stoat toxin delivery device called the Spitfire, has had extensive input from the Maori advisory group – Nga Matapopore. Connovation Ltd were key commercial partners in an MBIE funded program run through Lincoln University. As part of the MBIE funded hui on October 9<sup>th</sup> and 10<sup>th</sup> 2014 with the Nga Matapopore group, there was a discussion about the impediments to the use of PredaSTOP™ for ground control. It was discussed how, when we had registered PAPP for ground control in 2011, we thought we had delivered a major new tool for protection of kiwi, however, conditions imposed by ACVM (MPI) and EPA made PredaSTOP™ unusable in practise. During closing remarks by Nga Matapopore we were encouraged to persevere and overcome these impediments to the use of PredaSTOP™ to enable the use of this much needed tool. In July 2015, the EPA removed the 3 km notification requirement for stoat control with PredaSTOP™, since then several groups have undertaken stoat control with this product and many more have undergone planning and training to enable its use. Similar uptake and use is expected if the notification for feral cat control with this tool can also be changed.

It is worth noting that the baiting strategy and bait size (both the non-toxic meat and dose of toxin) differs between PredaSTOP™ for stoats and PredaSTOP™ for feral cats. Stoat control with this product involves making up toxic baits that consist of 5 – 10 g of fresh minced meat with 35 mg of PredaSTOP™ toxic paste applied to the centre of these meat balls. Feral cat control with this product involves making up toxic baits that consist of 15 g of fresh minced meat with 200 mg of PredaSTOP™ toxic paste applied to the centre of these meat balls.

### 3. Information on the substances

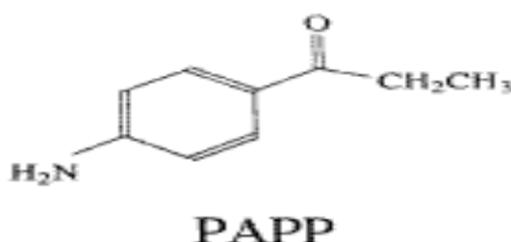
#### 3.1. The unequivocal identification of the substance

Para aminopropiophenone (PAPP)

<b>Synonyms :</b>	1, 4 para-aminopropiophenone 1-propanone, 1-4 aminophenyl 4-aminopropiophenone
<b>CAS No:</b>	70-69-9
<b>Formula :</b>	C <sub>9</sub> H <sub>11</sub> NO
<b>Molecular weight:</b>	149.19

#### 3.2. Information on the chemical, physical and hazardous properties of the substance

<b>Structure:</b>	There is a central aromatic ring with an amino group opposite (in the para position) a propyl-phenone chain. This creates a combination of both polar and non-polar sections of the molecule.
<b>Appearance:</b>	Light yellow crystalline powder



<b>Melting point:</b>	140°C (100%); 137 – 142°C (98% min.)
<b>Boiling point:</b>	482 ° C
<b>Solubility in water:</b>	352 mg/L @ 37 °C
<b>Log n-octanol/water partition coefficient:</b>	1.43- 1.25
<b>pka:</b>	3.19
<b>Vapour Pressure:</b>	8.05 * 10 <sup>-4</sup> torr @ 25.0 °C
<b>pH:</b>	5.15 (as saturated solution, 0.353 g/L)
<b>Appearance:</b>	Green smooth paste with grainy texture
<b>Odour:</b>	Nil
<b>Specific gravity:</b>	1.06 – 1.08

**pH:** Not applicable

### 3.3. Identification of the controls on the substances

The control we seek to modify from the original EPA decision document on PredaSTOP™ is listed below.

(1) No person may apply, or engage to apply, PAPP Paste A unless the person has given notice of the proposed application to occupiers and, as far as practicable owners, of land, dwellings or buildings within 3 km of any intended bait station site.

(2) The notice referred to in subclause (1) must—

(a) be given with sufficient prior notification, no less than 24 hours, but no more than 2 months, before the proposed application and, if requested by the person notified, shall be repeated at a mutually agreed time before the proposed application; and

(b) specify the following:

(i) the approximate date on which the substance will be applied;

(ii) the name and nature of the substance;

(iii) the risks to companion animals and details of antidotes;

(iv) a description of the area within which the substance will be applied, including—

(A) the boundaries of the area; and

(B) districts, roads, and other commonly known features that may identify the place;

(v) the name, address and contact details of the person responsible for the application of the substance.

### 3.4. The proposal to modify the approval of the substances

Currently when carrying out a feral cat control operation with PredaSTOP™ users are required to notify any landowner or occupier within 3 km, this is only a notification not an approval. The purpose of this application is to reduce the current 3 km notification control to one that requires users to notify any landowner or occupier within 500 m of a bait station.

This product has had very little use to date for feral cat control mainly due to the requirement for end users to notify any landowner within 3 km of a feral cat control operation with PredaSTOP™, in certain cases this will mean the notification of hundreds of households and is neither practical nor possible. The notification control was set to enable pet cat owners in that area to keep their pets safe and reduce risk of them entering the bait control area. The size of the notification area (3 km) appears to have been based on one study in which one domestic cat, out of the 38 cats in the study, moved a maximum of 2.29 km from its home (Metsers et al., 2010). In this same study the authors noted that the average movements away from home were less than 200 m for all cats. The authors also noted that the largest straight-line distances from home were recorded at night and suggested that a simple remedy to this would be nocturnal cat containment.

A large amount of peer reviewed science has been carried out looking at the home ranges of feral cats and the distances domestic cats roam from their homes (Morgan et al. 2009; Kays & DeWan 2004; Liliith et al. 2008). It is well understood that feral cats must range widely to obtain sufficient food and as such have much larger home ranges than domestic cats (Gillies & Fitzgerald, 2005). However, research looking at the home range and movements of domestic cats has found that they generally range over small areas of  $\leq 5$  ha (Morgan et al. 2009; Kays & DeWan 2004; Liliith et al. 2008). In one of these studies domestic cats were radio tracked in a research trial in Christchurch and the maximum distance the cats moved from their homes ranged from 29 m to 276 m (Morgan et al. 2009). In another of these trials the longest linear movement by any cat was 300 m from its home and the authors recommended a buffer zone of 360 m to reduce incursions by domestic cats into native bush (Liliith et al. 2008).

More recent research of domestic cats in Wellington involved GPS collaring 211 cats to track their movements and found that 94% of these cats never moved more than 500 m in a straight line from their homes and only 1 of the 211 study cats ever moved more than 1 km in a straight line from their homes (Pers. Comm. Heidy Kikillus, 2017 Victoria University Unpublished PhD data).

This is in contrast to feral cats that have been found to have home ranges anywhere from 122 hectares to 2486 hectares (Fitzgerald & Karl, 1986; Gillies, 1998; Recio et al., 2010). From this data it would be more reasonable to have to notify any landowner or occupier with a boundary that is 500 m or less from a bait station when feral cat control is being carried out using PredaSTOP™. As part of this notification, landowners or occupiers would be advised to keep their cats inside overnight when a control operation is being carried out. These controls would enable end users to begin using PredaSTOP™ move widely as a control tool and enable more effective protection of native birds whilst still responsibly minimising the risk to domestic cats. It should be noted that PredaSTOP™ is a controlled substance and requires users to have a controlled substance license, understand best practice use of vertebrate toxic agents and fulfil all other requirements when using this toxin including providing adequate signage.

Fitzgerald B.M. and Karl B.J. (1986) Home range of feral cats (*FELIS CATUS* L.) in forest of the Orongorongo Valley, Wellington, New Zealand. *Journal of Ecology*, Vol 9.

Gillies, C. (1998). Aspects of the ecology and management of small mammalian predators in northern New Zealand. PhD Auckland University.

Gillies, C. and Fitzgerald, B.M. 2005: Feral cat. In: King, C.M. (ed.). *The handbook of New Zealand mammals*, pp. 308-326. Second edition. Oxford University Press, Oxford, UK.

Kays, R. W., and DeWan, A. A. (2004). Ecological impact of inside/outside house cats around a suburban nature preserve. *Animal Conservation* 7, 273–283. doi:10.1017/S1367943004001489

Liliith, M., Calver, M., and Garkaklis, M. (2008). Roaming habits of pet cats on the suburban fringe in Perth, Western Australia: what size buffer zone is needed to protect wildlife in reserves? In 'Pest or guest: the zoology of over abundance'. (Ed. D. Lunney.) pp. 65–72. (Royal Zoological Society of New South Wales: Sydney.)

Metsers E.M., Seddon P.J., van Heezik Y.M. (2010) Cat-exclusion zones in rural and urban-fringe landscapes: how large would they have to be? *Wildlife Research*, 2010, 37, 47–56

Morgan S. A., Hansen C. M., Ross J. G., Hickling G. J., Ogilvie S. C., Paterson A. M. (2009) Urban cat (*Felis catus*) movement and predation activity associated with a wetland reserve in New Zealand. *Wildlife Research* 36(7) 574–580.

Recio, M.R., Mathieu, R. Maloney, R. and Seddon, P.J. (2010). First results of feral cats (*Felis catus*) monitored with GPS collars in New Zealand. *New Zealand Journal of Ecology* (2010) 34(3): 288-296.

### 3.5. Commercial sensitivity

The applicant does not consider that there are any significant issues regarding commercial sensitivity associated with the proposed modifications because the proposal relates to the use pattern of PredaSTOP™ and its active ingredient PAPP and not to the chemistry and manufacturing information in the original approval that may have commercial sensitivities. The relevant use pattern information is already in the public domain.

## 4. Risks, costs and benefits

### 4.1. Identification of all the effects associated with the reassessment proposal (section 63A(6)(a))

Reducing the notification requirement to landowners and occupiers within 500 m of a bait station will essentially reduce notification to neighbouring properties under most scenarios and will enable PredaSTOP™ for feral cats to be used. It is a valuable tool for feral cat control that has been rendered useless partly due to the requirement for end users to notify any landowner within 3 km of a feral cat control operation with PredaSTOP™, in many cases this will mean the notification of hundreds of households and is not practical or possible.

### 4.2. Assessment of the risks associated with the reassessment proposal

The use of this product is restricted to controlled substance licence holders, the same licence that controls the use of other Vertebrate Toxic Agents (VTA). These licence holders undergo training for each VTA they're endorsed to use and therefore understand the risks involved with each one. It's not anticipated that the proposed change will greatly alter the risk profile of this substance as it will not change the bait type, delivery method or persons endorsed to use it. The EPA have already evaluated the risks and costs of PredaSTOP™ and determined that it "*pose negligible risks to human health and to the environment*".

### 4.3. Assessment of the costs associated with the reassessment proposal

We consider that the costs (of implementing the controls) would be reduced by reducing the notification requirement. The costs involved with this reassessment proposal will be incurred by the applicant in submission fees and staff time. There are no perceived costs to be incurred as a result of this proposal being approved.

#### 4.4. Assessment of the benefits associated with the reassessment proposal

Feral cats are considered significant predators of native wildlife in New Zealand (Gillies 2001). They are known predators of native birds, reptiles, bats and insects (Alterio and Moller 1997; Veitch, 2001; Sanders & Maloney 2002; DOC, 2010; Scrimgeour et al. 2012). As outlined in Farnworth et al. (2013) feral cats have been linked to predation of some of New Zealand's most iconic species including kiwi (*Apteryx mantelli*) (Gillies et al. 2003), kakapo (*Strigops habroptilus*) (Powlesland et al. 1995) and New Zealand Dotterel (Dowding and Murphy 1993). They are believed to be responsible for the local extinction and decline of several species of endemic birds (King 1985; Gillies & Fitzgerald 2005). As outlined by Recio et al. (2010), they are known to prey upon the adults, chicks and eggs of the black fronted tern (*Sterna albobriata*) and the black stilt (*Himantopus novaezelandiae*) (Sanders & Maloney 2002; Keedwell 2005) both New Zealand host endemic species of ground-nesting birds.

Current feral cat control options are limited to labour intensive trapping and relying on secondary poisoning of feral cats that scavenge rats that have been killed with baits containing 1080 or brodifacoum (Gillies et al. 2003). PredaSTOP™ for feral cats is currently the only registered toxin for feral cat control in New Zealand and to date it has had limited use partly due to the notification requirement. Reducing the notification from 3 km to 500 m, when using PredaSTOP™ for feral cats, will allow many practitioners (who are already licenced for this product) to undertake effective feral cat control and enhanced native species protection.

Reducing this notification will also ensure that PredaSTOP™ (a non-residual toxin) is considered as a viable alternative to relying on secondary poisoning of feral cats from residual toxins like brodifacoum. In New Zealand, the residues from brodifacoum and other second generation anticoagulants have been recorded in non-target wildlife (Dowding 2006; Fisher et al. 2010) and game animals including feral pigs (Eason et al. 2002).

Alterio N, Moller H. 1997. Diet of feral house cats *Felis catus*, ferrets *Mustela furo* and stoats *M. erminea* in grassland surrounding yellow-eyed penguin *Megadyptes antipodes* breeding areas, South Island, New Zealand. *Journal of Zoology* 243, 869-77.

Dowding JE, Murphy EC. 1993. Decline of the Stewart Island population of the New Zealand dotterel. *Notornis* 40, 1-13.

Dowding JE, Lovegrove TG, Ritchie J, Kast SN, Puckett M 2006. Mortality of northern New Zealand dotterels (*Charadrius obscurus aquilonius*) following an aerial poisoning operation. *Notornis* 53: 235–259.

Eason CT, Murphy EC, Wright GRG, Spurr EB 2002. Assessment of risks of brodifacoum to non-target birds and mammals in New Zealand. *Ecotoxicology* 11: 35–48.

Farnworth, M. Muellner, P. Benschop, J. 2013. A systematic review of the impacts of feral, stray and companion domestic cats (*Felis catus*) on wildlife in New Zealand and options for their management. Unitec Institute of Technology

Fisher P. 2010. Environmental fate and residual persistence of brodifacoum in wildlife, Envirolink Advice Grant Hawkes Bay Regional Council, 884-HBRC131.

Gillies C 2001. Advances in New Zealand mammalogy 1990–2000: House cat. *Journal of the Royal Society of New Zealand* 31: 205–218.

Gillies, C. and Fitzgerald, B.M. 2005: Feral cat. In: King, C.M. (ed.). *The handbook of New Zealand mammals*, pp. 308-36. Second edition. Oxford University Press, Oxford, UK.

Gillies CA, Leach MR, Coad NB, Theobald SW, Campbell J, Herbert T, Graham PJ, Pierce RJ. 2003. Six years of intensive pest mammal control at Trounson Kauri Park, a Department of Conservation "mainland island", June 1996-July 2002. *New Zealand Journal of Zoology* 30, 399-420.

Keedwell RJ 2005. Breeding biology of Black-fronted Terns (*Sterna albostrigata*) and the effects of predation. *Emu* 105: 39–47.

King CM 1985. Immigrant killers: Introduced predators and the conservation of birds in New Zealand. Auckland, Oxford University Press. 224 p.

Powlesland RG, Roberts A, Lloyd BD, Merton DV. Number, fate and distribution of kakapo (*Strigops habroptilus*) found on Stewart Island, New Zealand, 1979- 92. *New Zealand Journal of Zoology* 22, 239-48, 1995

Recio, M.R., Mathieu, R. Maloney, R. and Seddon, P.J. 2010. First results of feral cats (*Felis catus*) monitored with GPS collars in New Zealand. *New Zealand Journal of Ecology* (2010) 34(3): 288-296.

Sanders MD, Maloney RF 2002. Causes of mortality at nests of ground-nesting birds in the Upper Waitaki Basin, South Island, New Zealand: a 5-year video study. *Biological Conservation* 106: 225–236

Scrimgeour J, Beath A, Swanney M. Cat predation of short-tailed bats (*mystacina tuberculata rhyocobia*) in rangataua forest, mount ruapehu, central North Island, New Zealand. *New Zealand Journal of Zoology* 39, 257-60, 2012

Veitch CR. The eradication of feral cats (*Felis catus*) from little Barrier Island, New Zealand. *New Zealand Journal of Zoology* 28, 1-12, 2001

**4.5. Assessment of any particular risks, costs and benefits which arise from the relationship of Māori and their culture and traditions with their taonga, or which are, for other reasons, of particular relevance to Māori**

In 2011, PredaSTOP™ (also referred to as PAPP Paste A, PAPP Paste B or PAPP Ready-to-use Bait) was registered for stoat and feral cat control and the approval document issued by the EPA stated that:

“it is unlikely that PAPP Paste A, PAPP Paste B or PAPP Ready-to-use Bait could have a significant impact on Māori culture or traditional relationships with ancestral lands, water, sites, wāhi tapu, valued flora and fauna or other taonga. There is no evidence to suggest that the controlled use of PAPP Paste A, PAPP Paste B or PAPP Ready-to-use Bait will breach the principles of the Treaty of Waitangi.”

The development of PredaSTOP™ for feral cats and stoats, as well as the ongoing research into the extension of its use in a resettable stoat toxin delivery device called the Spitfire, has had extensive input from the Maori advisory group – Nga Matapopore. Connovation Ltd were the key commercial partner in an MBIE funded program run through Lincoln University. As part of the MBIE funded hui on October 9<sup>th</sup> and 10<sup>th</sup> 2014 with the Nga Matapopore group, there was a discussion regarding the impediments to the use of PredaSTOP™ for ground control. The discussion centred around the registration of PAPP for ground control in 2011, and when this occurred it was thought we had delivered a major new tool for protection of native wildlife. However, conditions imposed by ACVM (MPI) and EPA made PredaSTOP™ unusable in practise. During closing remarks by Nga Matapopore we were encouraged to persevere and overcome these impediments to the use of PredaSTOP™ to enable the use of this much needed tool. Since the removal of the notification requirement for stoat control with PredaSTOP™ numerous groups have undertaken control with this product and many more have undergone planning and training to enable its use.

Amending the notification control for PAPP for feral cats is unlikely to increase the risks to Māori culture or traditional relationships with ancestral lands, water, sites, wāhi tapu, valued flora and fauna or other taonga. It's likely that the costs of implementing the controls would be reduced by reducing the notification requirement. The amendment also has the potential to provide enhanced protection of several taonga species through the increased uptake and use of PAPP which can be seen as a benefit.

## 5. International considerations

### 5.1. The best international practices and standards for the safe management of the substance (section 63A(6)(b))

PAPP is not currently registered for use on feral cats in any other country however registration for its use is being sought in Australia and PAPP baits for wild dog and fox control have been registered there. Use in New Zealand is restricted to delivery in a bait station that excludes non-target species in line with the international move towards the more targeted delivery of VTA's.

### 5.2. International obligations and treaties

NZ has international obligations regarding welfare and also residues in meat and the non-residual VTA PAPP has benefits for both. PAPP is considered to be a relatively humane toxin (Fisher et al. 2005; MAF 2010) this is clear when its symptoms are compared to other VTAs. It is the only VTA which has been developed with humaneness as a primary consideration.

If recommended practices are followed in pest control operations, PAPP is highly unlikely to be present in meat for human consumption. Data on the metabolism of PAPP in laboratory animals and on target species demonstrate rapid excretion with no persistence in animal tissues or tendency to accumulate should there be accidental ingestion (Marino et al. 1997).

Fisher, P.M., O'Connor, C.E. and Murphy, E.C. 2005. Acute oral toxicity of *p*-aminopropiophenone to stoats (*Mustela erminea*). Nz Journal of Zoology, Vol. 32: 163 – 169.

Marino, M., Urquhart, M.R., Sperry, M.L., van Bredow, J., Brown, L.D., Lin, E., Brewer, T.G., 1997. Pharmacokinetics and kinetic-dynamic modelling of aminophenones as methaemoglobin formers. *J. Pharm Pharmacol*, 49, 282-287.

Ministry of Agriculture and Fisheries 2010. How humane are our pest control tools? MAF Biosecurity New Zealand Technical Paper No: 2011/01. 148 p. Available online at [www.biosecurity.govt.nz/aboutus/our-publications/technical-papers](http://www.biosecurity.govt.nz/aboutus/our-publications/technical-papers).

## 6. Hazardous substance knowledge

### 6.1. A glossary of scientific and technical terms used in the application

VTA – Vertebrate Toxic Agent

PAPP - Para-aminopropiophenone

### 6.2. Other information considered relevant to this application not already included

## 7. Summary of public information

### 7.1. Name of the substance for the public register

PredaSTOP™ for feral cats containing 410g/kg PAPP (Para-aminopropiophenone)

### 7.2. Purpose of the application for the public register

Currently when carrying out a feral cat control operation with PredaSTOP™ users are required to notify any landowner or occupier within 3km. The purpose of this application is to reduce the current 3 km notification control to one that requires users to notify any landowner or occupier within 500 m of a bait station.

### 7.3. Executive summary

The vertebrate toxic agent PAPP was registered in New Zealand in 2011 for the control of feral cats under the trade name PredaSTOP™ for feral cats. This product has had limited use to date in part due to the requirement for end users to notify any landowner within 3 km of a feral cat control operation with PredaSTOP™ for feral cats. In many cases this will mean the notification of hundreds of households and is not practical or possible. This restriction was due to the concern of accidental poisoning of domestic cats. Research into the roaming habits of domestic cats suggests it would be more reasonable to have to notify any landowner or occupier with a boundary that is 500 m or less from a bait station when feral cat control is being carried out using PredaSTOP™. As part of this notification, landowners or occupiers would be advised to keep their cats inside overnight when a control operation is being carried out. These controls would enable end users to begin using PredaSTOP™ as a control tool and enable more effective protection of native birds whilst still responsibly minimising the risk to domestic cats.

## 8. Applicant's signature

19/09/2017

Signed

Date