

Application for DOC permission to use VTAs: assessment report

Applicant name:	s 9(2)(a) – EcoFX Ltd
Operation name:	Upper and Lower Hollyford Area
Approving manager:	Hilary Aikman, Director National Operations
Assessor:	s 9(2)(a), 9(2)(a)(ii) – Senior Ranger Biodiversity Bathurst Project
Date received:	11/09/2019
Overview:	<p>To control rats and possums (with a by-kill of stoats) in the Hollyford Area following a rat irruption triggered by a beech mast event, it is proposed that the following pesticide uses will be applied:</p> <ul style="list-style-type: none"> • Pesticide Use [1] Sodium fluoroacetate 1.5g/kg Cereal Pellet, Aerial • Pesticide Use [2] Sodium fluoroacetate 1.5g/kg Cereal Pellet, Hand Broadcast. • Pesticide Use [140] Sodium fluoroacetate 1.5g/kg Cereal pellet, Aerial (Pestex) • Pesticide Use [141] Sodium fluoroacetate 1.5g/kg Cereal pellet, Hand laying (Pestex) <p>Permission is sought for toxic application starting on or after 9/10/2019 and ending on or before 1/5/2020. Non-toxic prefeed will be applied no earlier than 9/10/2019.</p> <p>The operational area has two treatment blocks – Upper Hollyford and Lower Hollyford with a total consented area of 70933 ha comprising:</p> <p>Public Conservation Land</p> <ul style="list-style-type: none"> • 12267.6 ha of the Pyke Forest Conservation Area, a Stewardship Area under Section 25 of the Conservation Act 1987 • 57598 ha of the Fiordland National Park, a National Park under the National Parks Act 1980 <p>Other land tenure</p> <ul style="list-style-type: none"> • 291.7 ha of Legal Roads (Southland District Council) • 443.3 ha of land administered by Land Information New Zealand • 295 ha of Private Freehold

	<p>Milford Sound is approximately 10 km west north west from the closest boundary (Moraine Creek). Te Anau is approximately 84km South on SH94 from the Southern boundary of the operation (The Divide). It includes both sides of the Hollyford Valley until it reaches the Tasman Sea. It follows the Pyke River down as far as the swing bridge on the Hollyford tack. This includes both sides of The Milford Te Anau Highway (94) from the Divide to the Monkey Creek Carpark.</p> <p>The closest town is Te Anau, which is approx. 84km south of southern boundary of the operation.</p>
Applicant type:	<p>DOC operation —DOC SOPs will apply.</p> <p>EcoFX has the contract to project manage and deliver the operation.</p>

Step 1 Confirm application is complete <i>Are all documents (listed below) provided?</i>	
DOC Application form complete:	<p>The original application was sent in May 2019. Since then there have been enough changes required to the application that the application was rewritten and submitted in September. This assessment is based on the September 2019 application.</p> <p>A DOC application form completed by the contractor ECoFx was available to the assessor DOC-6070330.</p> <p>(project homepage DOC-6014533)</p> <p>All sections of the application were completed in conjunction with the MOH application and AEE and give an adequate account of the proposed operations. The proposed application is one contiguous block so the DOC grouping standard does not apply.</p>
Are all the proposed pesticide use(s) accepted for use?	<p>Yes.</p> <p>DOC's best practice applies and there are no compulsory restrictions. No compulsory information applies.</p>

Performance standards sheets	<p>PS #1 DOC-6000266</p> <p>PS #2 DOC-6000275</p> <p>PS #140 DOC-6000280</p> <p>PS #141 DOC-6062039</p>
DOC permission map(s) (image file or files)	<p>Yes – adequate maps were supplied.</p> <p>N.B – the consented area is larger than the actual area that will receive treatment to allow for any changes to the treatment boundary that may need to occur. The actual area treated will be shown correctly in the DOC Pesticide Summary (to inform the public) once it is finalised.</p>
DOC Pesticide Summary shapefiles (independent groups or individuals only)	N/A – DOC operation, already captured.
Consultation record including conditions of landowner consents	<p>A DOC communications plan has been developed DOC-5731651. Initial consultation with key stakeholders was undertaken by DOC then responsibility for consultation and notification, except for iwi consultation, was handed to EcoFX to be completed.</p> <p>The EcoFX communications plan DOC-6015263 is comprehensive and updated on DOCCM by s 9(2)(a), 9(2)(a)(ii) as updated copies are sent by EcoFX.</p>
Public health permission/ proof of application	<p>A permission for this operation was applied for on 15th May 2019.</p> <p>Permission granted by the Southern District Health Board ref: 19/01/RWC/INVPH</p> <p>PHU permission and maps:</p> <p>DOC-5982943</p> <p>DOC-5982944</p>
Other (specify, e.g. RMA consent)	N/A
Your confirmation email and subsequent correspondence	<p>16/09/2019 Confirmation email sent to s 9(2)(a) from EcoFX.</p> <p>16/09/2019 Confirmation of file numbers from s 9(2)(a), 9(2)(g)(ii) for the Communications plans, Home page, A3 size of warning signs, no retractable</p>

	legs on bait buckets, map private landowner information correct (see email- DOC-6072708).
Step 2 Capture treatment blocks in the Pesticide Application	
Your publication of the proposed operation on the DOC Pesticide Summary (independent groups or individuals only) <i>Include date and note any issues.</i>	N/A DOC operation – already captured
Step 3 Evaluate control method <i>Is the proposed method suited to the pest problem, treatment area and consultation outcomes?</i>	
Your assessment of the control method	<p>The aerial application of 1080 cereal pellets has proven to be effective in reducing rodent numbers when utilised by experienced operators using currently accepted best practice methods and is suitable for the proposed control area. Proposed methods comply with Current Agreed Best Practice.</p> <p>Section 4 of the application describes the proposed control methods and adequately justifies their use for this operation:</p> <p>Aerially broadcast 1080 is the chosen control method as it is currently the only tool that is able to achieve high operation efficacy in rat and possum kills at a landscape scale for a reasonable cost. It is also the most effective and efficient method of rat and possum control over difficult and remote terrain. For a summary of operational efficacy of aerially broadcast 1080, see Fairweather et al., (2018).</p> <p>Timing of aerial 1080 treatment targeting rats can depend on multiple factors, including forest/habitat type, food availability/seed fall, and the times of heightened vulnerability to predation of the species being protected.</p> <p>This operation will comply with the updated Method Best Practice for BFOB aerial 1080 baiting (DOC-2749355) and current Code of Practice for aerial 1080 in kea habitat (DOC-2612859)”</p> <p>This year's unprecedented ‘mega mast’ makes predator control more challenging. The monitoring results for the three recently completed aerial 1080 operations have nearly 20% rat survival, significantly more than the operational target of less than 5% tracking tunnel</p>

	<p>index. Seed from the South Island’s biggest beech mast in 40 years means that rats don't need to travel far for food and their home ranges are small. Gaps in bait coverage have left pockets of rodents that won’t travel far enough to be encounter bait.</p> <p>It is vital that this operation is successful in order to avoid losing local populations of vulnerable native species such as mohua, whio, and long and short tailed bats, which are vulnerable to rat plagues.</p> <p>DOC’s Technical Advisory Group (TAG) has revised the usual 1.5 kg/ha bait application rate for several operations to an increased rate of 2 kg/ha. This will be applied by sowing baits in overlapping swathes, so that the probability of gaps is significantly reduced. The operational target is expected to be less than 5% tracking tunnel index.</p> <p>The proposed sowing rate at 2kg/ha exceeds the guidance in the current Method Best Practice of 1.5kg/ha for BFOB aerial 1080 baiting. A sowing rate of 2kg/ha has however been used successfully in many past operations.</p> <p>The operation will meet other best practice guidance and will comply with the Code of Practice for aerial 1080 operations in Kea habitat.</p>
Label directions	All proposed methods comply with label directions
Summary of any technical advice received on the proposed control methods.	Updated TAG advice received August 2019 re higher sowing rates (see above) and DOC-6036962 .
Summary of any Community relations and Pou Tairangahau advice received.	<p>See links to communications plans above. Concerns from landowners have been well handled and recorded in the communications plans. There is general support from private landowners and iwi.</p> <p>Iwi have been consulted through Kaitiaki Rōpū o Murihuku; a forum of representatives from each of the four Rūnanga Papatipu Murihiku (Hokonui, Waihōpai, Ōraka Aparima and Awarua) who are mandated to speak on behalf of their whanau/hapū and Rūnanga. Further consultation will be held by DOC with Te Ao Marama and Te Rūnanga o Makaawhio.</p> <p>16 of 18 private properties within the control area gave written permission for aerial 1080. Two landowners are</p>

	not in favour of the operation and their properties will not receive treatment.
Step 4 Identify and assess risks and adverse effects Are you satisfied that all risks and adverse effects have been identified?	
Are there any gaps in the applicant's assessment of these (where the AEE section was supplied)?	<p>No there are no gaps in the AEE. Risks and adverse effects of aerial 1080 are discussed (Appendix 5) for both non-target native (birds, fish, invertebrates, bats and lizards) and non-native species (dogs).</p> <p>TAG advice: The change from a 1.5kg/ha to 2kg/ha sowing rate for the 1080 toxic baits is considered unlikely to result in any significant increased risk to non-target species, and the information in the application and conclusion that the risks are low are still relevant.</p> <p>Any additional risk is also considered acceptable considering the potential benefit of increasing the sowing rate, and the risk of an unsuccessful operation should the usual 1.5kg/ha sowing rate be used instead.</p>
Relevant points from the DOC Pesticide Information Reviews	<p>There is a large body of research on the efficacy of 1080 within the DOC Pesticide Information Review. Nothing proposed in this application is inconsistent with the best practice application of aerial 1080. The AEE specifically looks at information on insectivorous bird species, kea, fish, insects, lizards and bats.</p> <p>Twenty-one colour banded and 5 unbanded SI robins survived 2 aerial 1080 pellet operations. Limited monitoring of short tailed bats showed no evidence of aerial 1080 poisoning. Invertebrate populations have been monitored in nine aerial poisoning operations and none have shown significant population effects on any species studied, nor is there evidence to suggest poisoned invertebrates are a significant factor in secondary poisoning of other animals. The risks 1080 operations pose to aquatic species is very low.</p> <p>A total of 222 radio tagged Kea have been monitored before and after 19 aerial 1080 operations and 24 have died from poisoning This operation will comply with the DOC Kea code of practice DOC-2612859.</p> <p>New Zealand lizards feed mostly on insects. A 2007</p>

	<p>experiment by Marshall & Jewell on the attractiveness of non-toxic RS5 cereal pellets in a range of conditions to grand and Otago skinks showed that baits were sampled (licked, nudged or bitten) but no animals tried to consume large pieces of cereal bait (PIR DOC-25427).</p> <p>The AEE report in the application is adequate for the operation.</p>
Summary of any technical or community relations advice received	Updated TAG advice received August 2019 re higher sowing rates (see above). See summary of community relations above.
Other resources consulted (specify)	<p>Fairweather, A.A.C.; Broome, K.G. 2018: Sodium Fluoroacetate Pesticide Information Review. Version 2018/6. Unpublished report docdm-25427, Department of Conservation, Hamilton, NZ. 134p.</p> <p>Robertson H., Dowding J., Elliott G., Hitchmough R., Miskelly C., O'Donnell C., Powlesland R., Sagar P., Scofield P., Taylor G. 2013: New Zealand Threat Classification Series 4. 22 p. Conservation status of New Zealand birds, 2012.</p> <p>Hollyford Operational Plan 2019 DOC-5687206.</p> <p>Kemp, J. R., Mosen, C. C. , Elliott, G.P., Christine M Hunter, C.M., van Klink, P. M. 2018: Kea survival during aerial poisoning for rat and possum control. V2 DOC code of practice for aerial 1080 in kea habitat.</p> <p>Lloyd, B.D., McQueen, S.M. 2000: An assessment of the probability of secondary poisoning of forest insectivores following an aerial 1080 possum control operation. <i>New Zealand Journal of Ecology</i> 26(1): 47-56.</p>
Your assessment of technical risks and adverse effects	<p>The proposed aerial and hand broadcast methods comply with Current Agreed Best Practice and are suitable for the site.</p> <p>Risk to non-target species is considered low with all native plant and animal populations benefiting a reduction in possum, rat (and, indirectly) stoat numbers.</p> <p>The treatment area is in kea habitat and the operation will comply with the Kea COP.</p>

<p>Your assessment of non-technical risks</p>	<p>The Hollyford area covers a range of DOC tracks, huts, shelters and carparks which are identified by name and on maps. Staff will be stationed at listed sites to provide advice to members of the public.</p> <p>Tracks will remain open during the operation. High use tracks will have staff staying overnight in huts. This also allows staff to quickly check the tracks after the operations.</p> <p>Should the toxic operation take place after the 20th of October, the inclusion of hand broadcast will allow bait to be applied within 20m of high use walking tracks/roads as specified in the Public Health permission.</p> <p>Written permission from 16 of 18 landowners has been received and filed. Two landowners are not in favour of the operation and their land will not receive treatment. There is good support from other landowners.</p> <p>There is good support from iwi.</p> <p>Dogs are known to be highly susceptible to 1080. While the majority of the area is National Park and no dogs are allowed, there are sections of private land that are being treated. Private landowners have been notified of risks to dogs as part of the consultation. Consultation is adequate and ongoing.</p>
<p>Step 5 Calculate estimated caution period and evaluate if risks and adverse effects are at an acceptable level <i>Will risks be managed adequately with the performance standards proposed for this operation? Include dates and outcomes of any discussion with the applicant.</i></p>	
<p>Estimated caution period for all the pesticide use(s)</p>	<p>PU#1 and #140– Caution periods are set at 8 months after bait application as recommended in the CP calculator (dry site 'No' (>600mm rainfall pa) and mean temp in the 6 months following the operations <10 degrees 'No'). Baits and carcasses must be monitored.</p> <p>PU#2 and #141 – Caution periods are set at 8 months after bait application as recommended in the CP calculator (dry site 'No' (>600mm rainfall pa) and mean temp in the 6 months following the operations <10 degrees 'No'). Baits and carcasses must be monitored.</p>
<p>How well does the proposed operation manage potential risks to native fauna?</p>	<p>The control method specifications (bait size, lure, colour, application rate) and proposed performance standards are adequate to manage risks to native</p>

	fauna.
How well are other potential risks managed?	<p>Dogs are not allowed in the National Park; however they may be kept on private land at Martins Bay and Big Bay. Private landowners have been informed of risks to dogs during consultation.</p> <p>The same operation was undertaken during 2017. The neighbours are well informed about the operation and warning signs will be in place to inform the public. The PHU permission contains conditions that cover the risk to human health.</p>
Are you satisfied with the proposed warning sign locations and normal points of entry?	Yes. The warning sign locations are shown on maps on all main tracks and accessways.
Summary of any technical or community relations advice received	See assessment of technical and non-technical risks.
Public health permission, including application form sighted (if not provided at time of application)	The application was sent 15 th May 2019 PHP code 19/01/RWC/INVPH. See above for file.
Other resources consulted (specify)	<p>The DOC Code of practice for aerial 1080 in kea habitat, DOC-2612859</p> <p>Current Agreed Best Practice – Possum Control – Handlaying 1080 Cereal Pellets Docdm-29797</p> <p>Current Agreed Best Practice – Possum Control – Aerial Application of 1080 Cereal Pellets Docdm-341728</p> <p>Current Agreed Best Practice – Rat Control – Aerial Application of 1080 Cereal Bait docdm-29375</p>
Which additional performance standards should be applied and why? <i>Consider impacts of conditions from other consents. Consider if the additional performance standards specific and auditable, and can be justified.</i>	<p>No additional performance standards required.</p> <p>See attached performance standards sheets: PS# 1 PS# 2 PS# 140 PS#141</p> <p>Pestex and Orillian bait are included as both may be used.</p>

Step 6 Make a recommendation <i>Should the application be approved or declined?</i>	
<p>What key points should the approving manager have drawn to their attention?</p>	<p>Advice received from the Tiakina Nga Manu TAG that a higher sowing rate of 2kg/ha than the applied for 1.5 kg/ha may be required due to current unprecedented mega mast conditions. This is summarised in the “Step 3” section (pages 4 & 5) above.</p> <p>Technical advice on potential effects of the revised sowing rate is summarised in the “Step 4” section (page 6) above. The higher sowing rate is likely to be more effective in reducing rat indices and has been successfully used in prior operations. Any potential effects of the increase in sowing rates on non-target native species is [low] and acceptable. The revised sowing rate of 2kg/ha remains within the rate approved in the PHU consent for the operation and meets the Kea COP.</p> <p>Should the toxic operation take place after the 20th of October, the inclusion of hand broadcast will allow bait to be applied within 20m of high use walking tracks/roads as specified in the Public Health permission.</p>
<p>Is approval or decline recommended?</p>	<p>Approval is recommended along with a readiness check.</p>
Step 7 Prepare documents and advise manager	
<p>For recommended approval: <i>Attached correct draft letter of permission, DOC Performance Standards sheet(s) and map(s) of operational boundaries.</i></p>	<p>DOC Permission Letter: <u>DOC-6000922</u></p> <p>Performance Standards Sheets: #1 <u>DOC-6000266</u> #2 <u>DOC-6000275</u> #140 <u>DOC-6000280</u> #141 <u>DOC-6062039</u></p>

	<p>Overview map (in letter):</p> <p>DOC-6092821</p> <p>Additional operational detail maps from contractor:</p> <p>Maps 1 DOC-6000589</p> <p>Map 2 DOC-6014728</p> <p>Map 3 DOC-6014729</p>
<p>For recommended decline: <i>Attach draft letter of decline including a summary of reasons.</i></p>	<p>N/A</p>

Record of permission decisions that differ from the assessor recommendation	
<p>Record of permission decision <i>Only complete this section where the manager has made a decision that differs from the assessor's recommendation. For example, where the manager decides on different operational timing or warning sign locations or rejects a recommendation to approve or decline the application.</i> <i>Where required, complete this in Section 7 (Approving or declining DOC permissions), Step 2. Record the difference between the decision and recommendation and summarise the reason(s) for the decision.</i></p>	

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