Sodium Fluoroacetate (1080) Derogation Application

Annex 1: Application form to apply for a temporary derogation to use a 'highly hazardous' pesticide and for renewal of derogations.

- This form shall be used to submit derogation requests for the use of 'highly hazardous' pesticides to FSC (initial applications and applications for renewal).
- In cases of joint applications, common information can be provided together. Information that is not common shall be presented by applicant.
- All fields have to be filled for Management Units (MUs) of all scale categories, unless otherwise specified.
- All fields have to be filled for both initial applications and renewal applications, unless otherwise specified.
- In this context 'scale' refers to the size or extent of the Management Unit (MU).

Scale category	Number of hectares in the Management Unit
Small Scale	≤ 1,000 ha
Medium scale	Between small scale and large scale
Large scale	> 10,000 ha (plantations) > 50,000 ha (non-plantation forest types)

- Applications shall be submitted in English or Spanish.

Part 1. GENERAL INFORMATION.

Application Submission date	
Name, and contact details of certification body submitting the application	Rainforest Alliance Arie Soetjiadi–Asia Pacific Coordinator Jl Tantular Barat 88 Denpasar Bali Indonesia 80114 +623614723499 asoetjiadi@ra.org Soil Association Soil Association Woodmark South Plaza, Marlborough Street BRISTOL BS1 3NX Tel: + 44 (0)117 9142435 Email: wm@soilassociation.org Forest Management and Controlled Wood John Rogers jrogers@soilassociation.org SCS Global Services 2000 Powell St., Suite 600 | Emeryville, CA 94608 USA tel: 510.452.8049 | fax: (510) 452 6882 bgrady@scsglobalservices.com

	www.SCSglobalservices.com
Active ingredient for which a derogation is being requested	Sodium Fluoroacetate (1080) CAS 62-74-8
Trade name and formulation type of the pesticide	• Foxoff Fox Bait (520 mg/kg) • Foxoff Econobait (85 mg/kg) • Doggone Wild Dog Bait (100mg/kg) • Rabbait 1080 Oat Bait (400mg/kg) • 4Farmers 1080 Impregnated Oats (Wild Dog Control) • 4Farmers One Shot 1080 Impregnated Oats • 4Farmers 1080 Impregnated Oats (Fox Control) • 4Farmers 1080 Ready-to-Lay (Rabbit Oat Bait) • Eradicat (180mg/kg) • Products containing Sodium Fluoroacetate (CAS 62-74-8) as the only active ingredient
Method of application, application equipment and intended quantities	**(i) Introduced vertebrate pest animal management throughout mainland Australia excluding rabbits.** <u>Method of application and application equipment</u> • Foxes and wild dogs – hand buried • Feral cats – specific placement of baits • Wild pigs – as per section 2 <u>Intended quantities</u> As per label or permit instructions Estimated use is a maximum of 1kg use per year. Indicative rates are: • Foxes and feral cats - 0.8g active ingredient per kilogram of bait. • Wild dogs - 24mg/kg of bait • Wild pigs - 120mg/kg of bait **(ii) Rabbit control in Western Aust.** <u>Method of application and application equipment</u> • In a trail or spread in the immediate vicinity of burrows. 1080 is impregnated in oats. Laid by hand or bait layer. <u>Intended quantities</u>

	• Estimated use is a maximum of 10kg Rabbit 1080 oats per annum. 1.5 – 3kgs per km of trail. **(iii) Pale Field Rat management in Araucaria plantations in Queensland** <u>Method of application and application equipment</u> • Broadcast in young Araucaria plantations. <u>Intended quantities</u> • 25 mls of 2% 1080 solution per kg of diced sweet potatoes, spread manually at a rate of 6 kg/ha, restricted to target plantation areas (only in young Araucaria plantations in Queensland). Most years nil baiting is required however in plague years up to 2 kg of active ingredient could be required to treat up to 1,000 hectares.
Common and scientific name of the pest (or description of the problem /issue, as applicable)	• European Fox (*Vulpes vulpers*) • Feral Cats (*Felis catus*) • Wild Dog (*Canis familiaris*) • Wild pig (*Sus scrofa*) • Rabbit (*Oryctolagus cuniculus*) (Western Australia only) • Pale Field Rat (*Rattus tunneyi var culmorum*) (Queensland only)
Name and FSC certification codes of certificate holders[1] requesting a temporary derogation. Please indicate scale category and whether it qualifies as SLIMF.	**Large scale certificate holders** • Albany Plantation Forest Company Pty Ltd Certificate code: SA-FM/COC-001378 License code: FSC-CO23801 • Australian Blue Gum Plantation Ltd Certificate Code: RA-FM/COC-001327 License Code: FSC-C019740 • Bunbury Fibre. Plantations Ltd Certificate Code :SA-FM/COC-001528 License Code: FSC-C014610 • HQ Plantations Pty Ltd Certificate Code: SCS-FM/COC-00148P

[1] In the case of forest management enterprises applying for FSC certification, the FSC certificate holder code can be provided at a later stage, if and when the company achieves certification.

	License CodeFSC-C107541 • HVP Plantations Certificate Code: RA-FM/COC-001128 License Code:FSC-C014387 • PF Olsen (Aus) Pty Ltd Certificate Code: SCS-FM/COC-004290 License Code: FSC-C111011 • WA Chip & Pulp Co. Pty Ltd trading as WAPRES Certificate Code: SCS-FM/COC-004647 License Code: FSC-C117107 **SLIMF scale certificate holders** • SFM Environmental Solutions Pty Ltd T/A SFM Forest Products Certificate Code: SA-FM/COC-002984 License Code:FSC-C102996
Scope for which a temporary derogation is being requested (Please, attach map if possible)	Refer attached map in Appendix 1.
Type of forest, species and expected forest area where use of the HHP is intended	Plantations of *Pinus radiata, Eucalyptus globulus, Eucalyptus nitens, Eucalyptus regnans, Pinus pinaster, Pinus caribaea, Pinus elliottii, Pinus caribaea/elliottii* hybrids *Araucaria cunninghamii*. Native vegetation remnants and other custodial land.

Part 2. SPECIFIC INFORMATION

1. Demonstrated need

1.a) Please describe briefly the silvicultural system (methods for site preparation, practices for harvesting, regeneration, time between rotations) in the MU(s) included in the scope of the requested derogation.

- Site preparation depends on slope and harvest methodology, which influences the amount of harvest residue. Consequently, site preparation ranges from weed control only, to heaping or chopper rolling residue, to ripping only or ripping and mounding. Tree nutrition is monitored and supplementary nutrients may be added to maximize productivity.
- Planting is carried out manually on all sites. For eucalypts, depending on survival and other site characteristics, coppicing is often used to re-establish plantations rather than re-planting. Planting density is between 800 and 1600 stems per hectare planted in rows.
- Eucalypt plantations are grown on a 10-25 year rotation and at times, may include commercial thinning. Pine plantations are grown on a 25-40 year rotation and depending on slope, are either unthinned or thinned up to 3 times in a rotation. Araucaria plantations are grown on a 40-50 year rotation and are typically not commercially thinned. Native forest areas surrounding plantation estates under the management of plantation growers are managed for fire protection and conservation values and as such pest control activities can be implemented in these areas.
- Harvesting is carried out using a range of mechanised systems and, for safety reasons, every effort is made to avoid the use of manual felling.
- The time between rotations is kept to a minimum, ideally less than 12 months, as any delay results in a lost year of production and a lost year of land cost.

1.b) Please describe the Integrated Pest Management (IPM) system in place, including the plan to monitor the distribution and density of the targeted pest organisms in the MU(s).

All forest managers follow an Integrated Pest Management system similar to the FSC Guide to integrated pest management in FSC certified forests and plantations (Willoughby et al. 2009). The essential components of these systems are:

1. Identification of the problem
2. Assessment of the impact of the problem
3. Assessment of consequences of no actions
4. Where action is warranted, assess means of avoiding the problem
5. If the problem can't be avoided, assess non-chemical means of remediation
6. If non-chemical remediation is not possible, assess chemical means of remediation

For each assessment, consideration should be given to the short and long term impacts of both the problem and any action on:

1. Operators
2. Aquatic environments
3. Terrestrial environments
4. Stakeholders
5. Future operations

In the case of sodium fluoroacetate this process has been followed and is demonstrated below for each of the targeted pest organism that are the subject of this application.

<table>
<tr><th colspan="4">1.b)(i) Introduced vertebrate pest animal management throughout mainland Australia excluding rabbits.</th></tr>
<tr><td>Problem identification</td><td colspan="3">• Landowners are required to control declared pest animals under Australian legislation and take action to actively protect the viable habitat of rare and threatened fauna species. The relevant legislation includes: Agriculture and Related Resources Protection Act 1976 (WA), Natural Resource Management Act 2004 (SA), Land Protection (Pest and Stock Route Management) Act 2002 (QLD), Flora and Fauna Guarantee Act 1988 (Vic), Rural Lands Protection Act 1998 (NSW), and nationally the Commonwealth Environment Protection and Biodiversity Act 1999.
• Neighbours are concerned that tree plantations provide suitable habitat for declared pest animals like foxes and wild dogs that can harm farm animals.
• Problems are often identified by concerned neighbours or local groups who want to have feral pests controlled for the protection of their farming interests or of native fauna or flora.
• Problems are also identified by Government Agencies who are concerned about a pest species impact on the conservation of a species e.g. foxes preying on bandicoots.</td></tr>
<tr><td rowspan="6">Assessment of impact (see also appendix 2)</td><td>Party / Aspect</td><td>Problem</td><td>Action</td></tr>
<tr><td>Pesticide Operators</td><td>• Nil</td><td>• Potential exposure to lethal substance</td></tr>
<tr><td>Aquatic environment</td><td>• Nil</td><td>• Nil</td></tr>
<tr><td>Terrestrial environment</td><td>• Soil erosion & damage
• Increased browsing pressure on native flora (McLeod and Norris, 2004)
• Threaten native fauna (McLeod and Norris, 2004)
• Kill domestic stock (McLeod and Norris, 2004)</td><td>• Cruel to target animals.
• Risk of death to off-target species.
• Risk of harm to domestic animals.
• Improved chance of success of landscape wide population reduction programs.</td></tr>
<tr><td>Stakeholders</td><td>• Economic harm to neighboring farms
• Threaten native fauna
• Concern about impact of plantations in local landscape.</td><td>• Sharing the economic burden of managing pest animals in the landscape</td></tr>
<tr><td>Future operations</td><td>• Loss of community goodwill and threat to ongoing operations.</td><td>• Improved relations with neighbors and local community</td></tr>
<tr><td>Consequence of no action</td><td colspan="3">The plantation estates of the applicants will become harbors for pest animals and populations will increase leading to increased concerns about plantation forestry in the local community because of the impacts of these animals on wildlife and domestic stock in neighboring properties.
But specifically:</td></tr>
</table>

	• Wild dogs and foxes are reaching sufficiently high numbers that they are becoming a substantial threat to livestock enterprises through mortality of young animals. • Wild dogs, cats, foxes and pigs all kill native fauna • Wild pigs consume a variety of wildlife including lizards, snakes, turtles, frogs, birds, crustaceans, insects and worms. Pigs compete for resources and destroy habitat by trampling and ground rooting, promoting the establishment of weeds which changes vegetation structure and causes soil erosion. In agriculture, wild pigs eat and trample crops, attack lambs, compete with livestock for vegetation and damage infrastructure. Feral pigs also transmit disease such as leptospirosis and brucellosis, and potentially spread swine fever and foot-and-mouth disease.
How can problem be avoided?	• The problem can be reduced by ongoing and timely engagement with local landowners so that landscape scale conservation initiatives are more likely to reduce population numbers of the target pest animal species.
Are there non-chemical control options?	• There are limited means of non-chemical control. Shooting is already widely used by forest managers where appropriate (e.g. away from residential areas and where pest animals can be seen). Hunting, trapping and fencing are also selectively used but are only effective generally where for example, only a small number of pests are known in an isolated area. None of these are 100% effective when used alone and consequently best practice management programs should use multiple techniques including poisoning (Wishart, 2015). Poisoning has been identified as the most cost effective and efficient means of reducing wild pig numbers rapidly (Department of Primary Industries and Fisheries, 2008). Research has shown that in order for fox control to be effective, shooting is not sufficient on its own (Hone, 1999, Gentle et al., 2007). In order to be more effective, shooting must be combined with baiting, ideally twice a year (McLeod et al., 2011).
What are the impacts of chemical control options?	• Pindone is an alternative chemical which is available for rabbit control, but is known to have poor efficacy for other pest species and consequently is only registered for use in Australia against rabbits. Pindone is also on the highly hazardous list but is less toxic than 1080. Given this, it is the preferred pesticide for control in eastern states but in the Western Australia, where 1080 is naturally occurring in plants, native animals are known to be more tolerant of ingestion and hence 1080 is the preferred pesticide. • Evidence has shown that the recent trend toward control of foxes at the landscape level has been far more effective than control interventions at the local level, such as an individual property (McLeod et al., 2011). The improvement in control at the landscape level, particularly in the duration of which control is achieved, is due to the reduction in the number of recolonising pests from adjacent properties. It is expected that

	controlling rabbits and other mammalian pests at the landscape level will also have the same benefit. It is therefore the view of forest managers that over and above the legal requirement, it is a community obligation to participate in landscape level control of both foxes and rabbits. This activity is also closely aligned with the FSC principle of maintaining or enhancing bio-diversity values in and around the exotic plantation estate established on privately owned land. • As identified by FSC, 1080 is principally a risk for non-target mammals and birds. For foxes, baits are buried 8-10 cm to avoid access by non target pests. Burying firstly prevents access by carnivorous birds or reptiles. Burying and using a bait type (meat) that is unpalatable to domestic livestock eliminates the risk to these species (Sharp and Sanders, 2004). There are few carnivorous marsupials or mammals that are attracted to the bait and the dose is set to a level that provides the absolute minimal dose to foxes, the most susceptible species, which is generally considered inadequate to be lethal to native carnivores. By using blank baiting, it can be determined whether animals other than foxes are taking baits (most marsupials or mammals that may be attracted are very small and would leave very different markings where the bait was dug up). If it is found that an animal other than a fox is taking the bait, baiting ceases. The greatest risk to animals from baiting is to domestic pets, dogs and cats. The risk to these animals is managed through responsible pet ownership, notification and signage. Similar risk mitigation measures are undertaken for wild dogs and feral cats.
References	Department of Primary Industries and Fisheries (2008). Feral pig control, a practical guide to pig control in Queensland. The State of Queensland. Gentle, M., Saunders, G. And Dickman, C. (2007). Persistence of sodium monofluoroacetate (1080) in fox baits and implications for fox management in south-eastern Australia. *Wildlife Research*. 34: 325-333. Hone, J. (1999). Fox control and rock-wallaby population dynamics – assumptions and hypotheses. *Wildlife Research*. 26: 671-673. Kehl, J.C. (1980) The biology and population ecology of Rattus tunneyi var. culmorum in hoop pine plantations in south-east Queensland. Masters Thesis, University of Queensland. Mathieson, M. and Smith, G. C. (2000). Report on the impacts of 1080 baitings for *rattus tunneyi* on non-target species at risk of primary or secondary poisoning within Hoop Pine plantations, Yarraman district. Forest Ecosystem Research and Assessment, DNR natural Sciences Precinct. McLeod, R. and Norris A. (2004). Counting the cost: Impact of invasive animals in Australia, 2004. Pest Animal Control CRC. McLeod, L., Saunders, G. and Miners, A. (2011). Can shooting be

	an effective management tool for foxes? Preliminary insights from a management program. *Ecological Management & Restoration*. 12(3): 224-226. Sharp, T. And Saunders, G. (2004). Fox 001- Ground baiting foxes 1080 – Standard Operating Procedure. Department of the Environment and Water Resources, New South Wales Department of Primary Industries. Willoughby, I., Wicken, C., Ivey, P., O'Grady, K. and Katto, F. (2009). FSC guide to integrated pest, disease and weed management in FSC certified forests and plantations. Forest Stewardship Council. Wishart, J. (2015). Feral pigs: a field guide to poison baiting. Invasive Animals CRC.

1.b)(ii) Rabbit control in Western Australia.	

Problem identification	• Rabbits are among Australia's most serious vertebrate pests because of their widespread impact on native flora and fauna, as well as on agriculture, forestry and pastoral industries. For example, the decline and extinction of many of Australia's terrestrial mammals that weigh between 35 and 5500gm (sometimes referred to as critical-weight-range species), particularly in the arid and semiarid zones, have been associated with the appearance of the rabbit (Calaby 1969). Thus, many of the mammals in central Australia have either disappeared altogether or become exceedingly scarce.
	• The estimated costs attributed to rabbits damage in newly established plantation ranges between $75/ha (protection and recovery of minor damage) to $1820 where replanting is necessary.
	• As a significant herbivore, rabbits:
	  ○ overgraze and inhibit the regeneration of native vegetation (Crisp 1978, Lange and Graham 1983, Cooke 1987), thus modifying natural plant communities and the fauna they support (e.g. in times of drought, rabbits forage on tree foliage and ringbark trees in searching for moisture)
	  ○ compete with native fauna for food (Dawson and Ellis 1979), and
	  ○ cause soil erosion (McManus 1979, Norman 1988).
	• As prey, rabbits support populations of introduced predators that also prey on native species (Catling 1988); for rabbits are often the primary prey species of both feral cats and foxes (Holden and Mutze 2002). Finally, rabbits compete with native fauna for shelter (Priddel et al. 1995).
	• Competition and land degradation by rabbits are listed as a key threatening process under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and may affect 156 threatened species listed under the Act. The Treat Abatement Plan for competition and land degradation by rabbits prepared by the Department of the Environment, Water, Heritage and the Arts 2008 list the animals and plants under threat from rabbits.
	• Before the introduction of myxomatosis and then rabbit haemorrhagic disease (RHD), rabbits greatly reduced stock productivity and caused profound direct and indirect damage to soils and to native plants and animals. While these biological controls have greatly reduced rabbit densities nationally, damage is still significant. Rabbit damage is worst in the rangelands, where a whole suite of plant species and their dependent animals are threatened with severe range contraction or extinction. The effect of

	the rabbit in preventing regeneration of native plants is not always obvious. Many of these plants are long-lived but the populations are reaching a stage where many individuals are dying from old age. If rabbits are not controlled before the remaining plants reach the end of their reproductive lives, there will be a long-term decline of the tree and shrub populations in many parts of the rangelands. The extent of the ecological consequences of this is unknown. Significant changes in bird communities and increased soil erosion are likely to be two of the main consequences. There may be no safe rabbit density for some tree and shrub seedlings particularly within 200 metres of rabbit warrens. • As well as causing detrimental habitat change, rabbits threaten native mammals directly through grazing competition and indirectly through intensified predation by cats and foxes after rabbit numbers crash during droughts or disease outbreaks. • The extent to which rabbits reduce the carrying capacity for livestock is not well quantified, although there are numerous anecdotal accounts of increased carrying capacity for sheep following rabbit control. Competition between sheep and rabbits is likely to be most significant when pasture biomass falls below about 250 kilograms per hectare, especially during and coming out of drought. Rabbits, in combination with other feral grazers and livestock, cause damage to the long-term sustainable use of rangeland for nature conservation and pastoralism. Rabbits cause changes in the quality of forage and damage to the flora and habitat of native fauna. • Sodium fluoroacetate (1080) is the preferred poison for controlling rabbits. Oat trails are considered the most efficient method of controlling rabbits (Twigg L E, et al 2002). The Code of Practice for the humane control of rabbits gives preference to the use of 1080 and the following quote is from the document: • The use of pindone can only be justified in situations where 1080 cannot be used i.e. in close proximity to urban areas where the risk of accidental poisoning to humans and companion animals is greatest. • The primary method of rabbit control in Western Australia is through myxomatosis and rabbit haemorrhagic disease (RHD). However, rabbit populations are becoming immune to these diseases and control is achieved through a integrated approach, including the use of 1080. • Poisoning with 1080 is achieved using the 'one shot' method which involves free feeding with oats for a period and then laying 1080 infused oats when rabbits are used to feeding. Legislation governs the preparation, laying and clean up of oat baits. Rabbits are a declared pest in Western Australia under the Poisons Act (1964) and Agriculture and Related Resources Protection Act, 1976 (WA) and control is obligatory. • Landowners are required to control declared pest animals under Australian legislation and take action to actively protect the viable habitat of rare and threatened fauna species. The relevant legislation includes: Agriculture and Related Resources Protection Act 1976 (WA), Natural Resource Management Act 2004 (SA), Land Protection (Pest and Stock Route Management) Act 2002 (QLD), Flora and Fauna Guarantee Act 1988 (Vic), Rural Lands Protection Act 1998 (NSW), and nationally the Commonwealth Environment Protection and Biodiversity Act 1999. • Rabbits are a major pest to recently planted pine and eucalypt plantations that are • Neighbours are concerned that tree plantations provide suitable habitat for declared pest animals like rabbits that can harm crops,

<table>
<tr><td></td><td colspan="3">trees and farm soil.
• Problems are often identified by concerned neighbours or local groups who want to have feral pests controlled for the protection of their farming interests or of native flora.
• Problems are also identified by Government Agencies</td></tr>
<tr><td rowspan="6">Assessment of impact
(see also appendix 2)</td><td>Party / Aspect</td><td>Problem</td><td>Action</td></tr>
<tr><td>Pesticide Operators</td><td>• Nil</td><td>• Potential exposure to lethal substance</td></tr>
<tr><td>Aquatic environment</td><td>• Nil</td><td>• Nil</td></tr>
<tr><td>Terrestrial environment</td><td>• Soil erosion
• Increased browsing pressure on native flora (McLeod and Norris, 2004)
• Damage to commercial crops.</td><td>• Cruel to target animals.
• Risk of death to off-target species.
• Risk of harm to domestic animals.
• Improved chance of success of landscape wide population reduction programs.</td></tr>
<tr><td>Stakeholders</td><td>• Economic harm to client forests
• Extreme concern about impact of plantations in local landscape.</td><td>• Sharing the economic burden of managing pest animals in the landscape</td></tr>
<tr><td>Future operations</td><td>• Loss of community goodwill and threat to ongoing operations.
• Failed establishment of new forests.</td><td>• Improved relations with neighbors and local community
• Full utilization of site by productive plantations.</td></tr>
<tr><td>Consequence of no action</td><td colspan="3">As a significant herbivore, rabbits:
• overgraze and inhibit the regeneration of native vegetation (Crisp 1978, Lange and Graham 1983, Cooke 1987), thus modifying natural plant communities and the fauna they support (e.g. in times of drought, rabbits forage on tree foliage and ringbark trees in searching for moisture)
• compete with native fauna for food (Dawson and Ellis 1979), and
• cause soil erosion (McManus 1979, Norman 1988).
As prey, rabbits support populations of introduced predators that also prey on native species (Catling 1988); for rabbits are often the primary prey species of both feral cats and foxes (Holden and Mutze 2002). Finally, rabbits compete with native fauna for shelter (Priddel et al. 1995).

From a plantation perspective where no action is taken severe damage can result to recently planted trees and also to neighbours crops and trees. The plantation estates of the</td></tr>
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	applicants will become harbors for rabbits and populations will increase leading to increased concerns about plantation forestry in the local community because of the impacts of rabbits on neighboring properties. See cost benefit analysis in Appendix 2.
How can problem be avoided?	This problem can only be avoided if the rabbit population is eradicated or kept at a very low level. The problem can be reduced by ongoing and timely engagement with local landowners so that landscape scale control initiatives are more likely to reduce rabbit numbers.
Are there non-chemical control options?	Rabbit biocontrol through Myxomatosis from 1950 and the rabbit Haemorrhagic Disease from 1995 have had substantial impacts, rabbit populations still remain at approximately 15% of their potential levels (Cox et al., 2013). This means that alternative means of control are still necessary in areas where populations have been sustained. While rabbit warren destruction and shooting and tree guards are used, these need to be supported by targeted baiting. Tree guards are a practical alternative on small areas of high value trees e.g. a seed orchard or special arboretum planting.
What are the impacts of chemical control options?	Pindone is an alternative chemical which is available for rabbit control, but is known to have poor efficacy for other pest species and consequently is only registered for use in Australia against rabbits. Pindone is also on the highly hazardous list but is less toxic than 1080. Given this, it is the preferred pesticide for control in eastern states but in the Western Australia, where 1080 is naturally occurring in plants, native animals are known to be more tolerant of ingestion and hence 1080 is a more appropriate and effective pesticide.
References	Cox, T., Strive, T., Mutze, G., West, P. and Saunders, G. (2013). Benefits of Rabbit biocontrol in Australia. Invasive Animals Cooperative Research Centre.

1.b)(iii) Pale Field Rat management in Araucaria plantations in Queensland			
Problem identification	• In particular areas of southern Queensland, the pale field rat can periodically (currently around 3 years in every decade) reach plague proportions and cause extensive damage to Araucaria plantations up to age 8-10 years, through excavation and chewing of the root system. Left unchecked significant areas of plantation would be damaged to the point that they require complete replanting at significant cost and lost years of production. In particular areas, the growing of Araucaria would possibly become unviable should periodic baiting to control rat plagues be unable to occur.		
Assessment of impact	**Party / Aspect**	**Problem**	**Action**

(see also appendix 2)	**Operators**	• Nil	• Potential exposure to lethal substance
	Aquatic environment	• Nil	• Nil
	Terrestrial environment	• Damage to commercial crops	• Cruel to target animals. • Risk of death to off-target species.
	Stakeholders	• Economic harm to client forests • Extreme concern about impact of plantations in local landscape.	•
	Future operations	• Failed establishment of new forests. • Threat to existing local markets if product can no longer be grown	• Full utilization of site by productive plantations.
Consequence of no action	In rat prone areas, if periodic plagues are not controlled, they are likely to become more prevalent and damage larger areas of Araucaria plantations. The economic cost of no action would threaten the viability of growing this native Australian timber species in areas where it has been an integral part of the local region/community for more than 50 years supporting a range of local businesses. There is little scope to change plantation species in this region due to climatic factors. Some hardwoods species would be possible however higher establishment costs, lower volume production and a lack of established markets currently make this option financially unviable.		
How can problem be avoided?	Through a combination of targeted silviculture to prevent the build up of rat populations plus periodic 1080 baiting to those areas where, despite preventative measures, populations reach a level where substantial crop damage is likely/occurring.		
Are there non-chemical control options?	Non-chemical methods to prevent the build up of rat populations are successful to a point and are already implemented as part of the integrated pest management strategy for rat control in rat prone areas. Mechanical treatment of the interrow (terrain permitting) plus additional chemical weed treatment (with non-HHP products), are used to reduce the area of suitable habitat for the pest. In addition, the mosaic of plantation age classes is managed to ensure large contiguous areas of young plantation, favoured by the rats, are not created.		
What are the impacts of chemical control options?	The non baiting options are effective in reducing the frequency and amount of baiting required by reducing the risk of plague rat populations from developing, however, when plagues do periodically occur baiting has been the only viable option to quickly reduce populations and prevent significant crop damage from occurring.		

1.c) Please indicate the thresholds above which, the damages caused by the targeted pest organisms are classified as severe and how they have been established.

1.c)(i) Introduced vertebrate pest animal management throughout mainland Australia excluding rabbits.

Pest	Threshold for damage	Basis of threshold
European Fox	Cause no damage to the crop, baiting is carried out only as part of regional control programs, where stakeholders complain or where forest managers notice significant numbers.	Stakeholder feedback and legislative requirements
Feral Cats	Cause no damage to the crop. Feral cats tend to be cryptic, or difficult to detect, and therefore baiting is carried out only where significant regional problems are identified and as part of a regional control program.	Stakeholder feedback and legislative requirements
Wild Dogs	Cause no damage to the crop, baiting is carried out only as part of regional control programs, where stakeholders complain or where forest managers notice significant numbers.	Stakeholder feedback and legislative requirements
Wild pigs	Pigs in general are uncommon so where they are detected, effort is made to control them. Where numbers are low (less than 6 animals in a locality), trapping and/or shooting are used, baiting is a last resort and is necessary in particular where the population density precludes the use of alternative means.	Stakeholder feedback and legislative requirements

1.c)(ii) Rabbit control in Western Australia.

Pest	Threshold for damage	Basis of threshold
Rabbits	Where tree mortality from rabbit damage exceeds 10%	Requirement to maintain acceptable level of stocking to maintain productivity and tree form.

1.c)(iii) Pale Field Rat management in Araucaria plantations in Queensland

Pest	Threshold for damage	Basis of threshold
Pale Field Rats	Population density index >5% for 0-2 year old plantations and >25% for 3-8 year old plantations. The index is derived from transect sampling undertaken each June.	Kehl (1980) established the key population density threshold for unacceptable damage

1.d) Please indicate the population size of the targeted pest organism in the MU(s).

Pest	Population Size
European Fox	Widespread in the landscape except for the tropics, tending to be more common in urban or populated areas.
Feral Cats	Cats occupy 99% of Australia and population estimates range from 5,000,000 to 20,000,000
Wild Dogs	Common in limited localities only in southeast Australia
Wild pigs	Widespread but generally in low numbers, common to abundant in the tropics, the population is estimated at 24,000,000 across Australia
Rabbits	Widespread throughout Australia and common particularly in southern Australia
Pale Field Rats	Widespread in the northern Australia but only reach plague population levels infrequently (two to three times a decade)

1.e. (Fill in only if you represent a large-scale MU)

Please indicate the conclusions of the comparative Cost/Benefit Analysis of using the requested pesticide versus other non-highly hazardous control alternatives,

The cost – benefit analysis shall include, at minimum, the following scenarios:

- *no action vs. remedial control (short-term)*
- *no action vs. preventive practices (long-term)*

- Refer to Appendix 2a and 2b – Cost Benefit Analysis.

1.f) (Fill in only if you represent a large-scale MU)

Please provide a review carried out by independent experts of the Cost/Benefit Analysis in e).

- The experts nominated by the FSC Australia board will review the costs benefit analysis at their meeting on 29th January prior to submission of the final applications.

1.g) (Fill in only if you represent a medium or small-scale MU)

Please describe possible non HHP alternatives to the use of the requested HHP and explain why they are not considered feasible to control the targeted pest organisms.

- Please refer to information presented in section 1.b.

1.h) Please include an estimate of the amount of area over which the pesticide is to be applied and how much of the pesticide is expected to be used annually.

- *See table below for an estimate of use rate and area*

Estimated use rates and areas expected annually

1.h) (I & ii) Introduced vertebrate pest animal management throughout mainland Australia	
Albany Plantation Forest Company Pty Ltd	
Estimated Annual Area of application (ha)	Areas across entire DFA (18,000ha)
Estimated Annual Use Active Ingredient (kg)	Up to 0.0006kg
Australian Blue Gum Plantation Ltd	
Estimated Annual Area of application (ha)	Areas across entire DFA (89,000 ha)
Estimated Annual Use Active Ingredient (kg)	Up to 0.0006kg
Bunbury Fibre. Plantations Ltd	
Estimated Annual Area of application (ha)	Areas across entire DFA (15,000 ha)
Estimated Annual Use Active Ingredient (kg)	Up to 0.0002kg
HQ Plantations Pty Ltd	
Estimated Annual Area of application (ha)	Areas across entire DFA (340,000 ha)
Estimated Annual Use Active Ingredient (kg)	Up to 0.02kg
HVP Plantations	
Estimated Annual Area of application (ha)	Large areas across entire DFA (240,000 ha)
Estimated Annual Use Active Ingredient (kg)	Up to 0.0012kg
PF Olsen (Aus) Pty Ltd	
Estimated Annual Area of application (ha)	Large areas across entire DFA (ca. 170,807ha)
Estimated Annual Use Active Ingredient (kg)	Up to 0.0012kg
WA Chip & Pulp Co. Pty Ltd trading as WAPRES	
Estimated Annual Area of application (ha)	Areas across entire DFA (29,000 ha)
Estimated Annual Use Active Ingredient (kg)	0
SFM Environmental Solutions Pty Ltd T/A SFM Forest Products	
Estimated Annual Area of application (ha)	Areas across Green Triangle DFA 5,500ha
Estimated Annual Use Active Ingredient (kg)	Up to 0.00005kg
1.h)(iii) Pale Field Rat management in Araucaria plantations in Queensland	
HQ Plantations Pty Ltd	
Estimated Annual Area of application (ha)	Up to 1000ha (only in plague years e.g. 2-3 yrs in 10)
Estimated Annual Use Active Ingredient (kg)	Up to 2kg (only in plague years e.g. 2-3 yrs in 10)

1.i) (Fill in only if you are applying for the renewal of a derogation)

Please attach a report on the implementation of the IPM system during the previous derogation period, covering at minimum:

- *Brief description of the silvicultural system in the MU(s) included in the scope of the requested derogation.*
- *A list of the monitored pest organisms.*
- *The results of the annual monitoring of the target species in relation to the defined thresholds.*
- *Quantitative data of the use of 'highly hazardous' pesticides per year for the full period of the existing derogation, areas of application and application method.*
- *A description of the programs that have been implemented to investigate, research, identify and test alternatives to the 'highly hazardous' pesticide, and the results.*

- Much of this material is described in detail elsewhere in this application:
  - Details of the silvicultural systems in the MU(s) are included in response to Question 1.a.
  - Details of the monitored pest organisms are included in response to Question 1.c. and 1.d.
  - Details of the results of monitoring programs are summarized in response to Question 1.d.
  - Details of the amount of sodium fluroacetate used during the period of the previous derogation is included below 1.i(I,ii,iii).
  - Details of the programs that have been implemented to investigate, research, identify and test alternatives to the use of sodium fluoroacetate are discussed in response to Question 3.a. and 3.d.

1.i) (i&ii) Historic use of Sodium Fluoroacetate on introduced vertebrate pest animal management throughout mainland Australia including rabbits.					
Albany Plantation Forest Company Pty Ltd					
	2011	**2012**	**2013**	**2014**	**2015**
Total are treated (ha)	Nil – not part of derogation				
Total active ingredient used (kg)	0	0	0	0	0
Total Defined Forest Area (ha)	21,655	21,690	19,666	19,202	18,117
Australian Blue Gum Plantation Ltd					
	2011	**2012**	**2013**	**2014**	**2015**
Total are treated (ha)	Broad areas across entire DFA				
Total active ingredient used (kg)	0	0.0003	0.00096	0.00105	0.00069
Total Defined Forest Area (ha)	92,041	113,116	107,861	98,362	89,390
Bunbury Fibre. Plantations Ltd					
	2011	**2012**	**2013**	**2014**	**2015**
Total are treated (ha)	Broad areas across entire DFA				
Total active ingredient used (kg)	0	0.00042	0.00050	0.00016	0.00026
Total Defined Forest Area (ha)	14,426	14,426	14,128	14,128	14,128
HQPlantations Pty Ltd					
	2011	**2012**	**2013**	**2014**	**2015**
Total are treated (ha)	Broad areas across entire DFA				
Total active ingredient used (kg)	N/a	0.001	0.004	0.009	0.003
Total Defined Forest Area (ha)	342,299	342,299	342,115	342,413	342,940
HVP Plantations					
	2011	**2012**	**2013**	**2014**	**2015**
Total are treated (ha)	Broad areas across entire DFA				
Total active ingredient used (kg)	0.0012	0.0012	0.0006	0.0006	0.00012
Total Defined Forest Area (ha)	242,000	241,000	241,000	240,000	240,000
PF Olsen (Aus) Pty Ltd					
	2011	**2012**	**2013**	**2014**	**2015**
Total are treated (ha)	Broad areas across entire DFA				
Total active ingredient used (kg)	To be confirmed				
Total Defined Forest Area (ha)					
WA Chip & Pulp Co. Pty Ltd trading as WAPRES					
	2011	**2012**	**2013**	**2014**	**2015**
Total are treated (ha)	Broad areas across entire DFA				
Total active ingredient used (kg)	0	0	0	0	0
Total Defined Forest Area (ha)	21,000	23,000	35,000	37,000	35,000
SFM Environmental Solutions Pty Ltd T/A SFM Forest Products					
	2011	**2012**	**2013**	**2014**	**2015**
Total are treated (ha)					
Total active ingredient used (kg)	No derogation in place – none used				
Total Defined Forest Area (ha)					

1.i) (iii) Historic use of Sodium Fluoracetate on Pale Field Rat management in Araucaria plantations in Queensland					
HQPlantations Pty Ltd					
	2011	**2012**	**2013**	**2014**	**2015**
Total are treated (ha)	0	0	0	0	957
Total active ingredient used (kg)	0	0	0	0	2.87
Total Defined Forest Area (ha)	342,299	342,299	342,115	342,413	342,940

2. Specified measures to prevent, minimize and mitigate impacts

2.a) Please describe the best management practices (BMP) that will be implemented in the MU(s) to prevent, minimize and mitigate negative social and environmental impacts of the application of HHPs during the requested derogation period, covering at minimum: application method, water courses, land use or terrain and weather conditions.

In addition to compliance with regulatory controls, forest managers seeking to use 1080 will undertake the following controls to reduce risks:

- Hand delivery of notices to adjacent neighbours and consideration of any neighbor concerns.
- Signage is erected to warn people of 1080 use on properties.
- No baiting within buffers around homes/residential areas
- No baiting within buffers around waterways
- Where target species will dig for bait – deep burying of baits will occur that will attract foxes and dogs but be unattractive to native wildlife.
- No 1080 baiting of rabbits in mainland states, excluding Western Australia.

Further, pest specific control measures relating to 1080 use are detailed below.

2.a) (i) Introduced vertebrate pest animal management throughout mainland Australia excluding rabbits.

- The 'Directions for Use' set of conditions that govern the use of 1080 for fox baiting on registered labels set requirements for:
  - Minimum distances between bait locations
  - Minimum distances from dwellings
  - Minimum distances from waterways and streams
  - Minimum burial depths of the baits (to prevent taking by non-target species)
  - Signage specifications to warn people of 1080 usage on the property
  - Prior notification requirements to all adjacent landholders
  - Disposal of unused baits and carcasses
  - Adherence to label requirements
  - Personal Protective equipment required
  - Safe handling procedures
- For wild pigs, baiting is restricted to periods when alternate food and water resources become scarce to improve the likelihood of pigs taking baits. Baiting is targeted to areas where pigs are known to be active based on tracks, dung, tree rubbing, tusking, ground rooting and wallowing. Pre-feeding with the same bait to be poisoned is used to ensure that pigs become accustomed to the bait, reducing the likelihood of non-target consumption. Pre-feeding is recommended to take place for 5-7 days prior to poisoning, however this depends on the level of activity, with additional time allowed if pigs are found to be hesitant to take the non-toxic baits. In high risk areas, a hoghopper can be used which is a specially designed baiting station to reduce the risk of non-target animals taking baits. Similarly, motion activated cameras can be used in high risk areas to both monitor pig activity and also to ensure that no non-target species are taking baits during the pre-baiting period (Wishart, 2015).
- For wild dog baiting, all baits are buried to a set depth and any 1080 bait not consumed within a fixed period are collected and destroyed.
- Animal carcasses are collected and destroyed

2.a)(ii) Rabbit control in Western Australia.

Western Australia is covered by a 'Directions for Use' set of conditions that govern the use of 1080 in addition to label requirements. Conditions are set for:

- Minimum distances between bait locations
- Minimum distances from dwellings
- Minimum distances from waterways and streams
- Minimum burial depths of the baits (to prevent taking by non-target species)
- Signage specifications to warn people of 1080 usage on the property
- Notification requirements to all adjacent landholders
- Disposal of unused baits and carcasses specifications
- Adherence to label requirements
- Personal Protective equipment required
- Safe handling procedures

The use of 1080 is also controlled under The Code of Practice for the Safe Use and Management of 1080 In Western Australia – August 2010. Adherence to the Code is obligatory under the Poisons Act, 1964.

Lund, D (2009) provides users with guidelines and obligations for the safe use of 1080 poison. The Western Australian Department of Agriculture and Food is responsible for granting permission for the use of 1080.

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2.a)(iii) Pale Field Rat management in Araucaria plantations in Queensland

Baits are used in strict adherence to the minor use permit for the use of 1080 as a bait for pale field rat along with a detailed company operating standard (Silviculture Manual, General Plantations, Chapter 4B Pest Control – Rats, 2012) which stipulates:

- Notification of stakeholders and permission from certain stakeholders required before baiting commences and consideration of any stakeholder concerns.
- Who can prepare baits (specific State issued accreditation required)
- The rate at which 1080 is mixed with bait
- The rate at which baits can be applied
- How the baits should be labelled and packaged
- Records that must be kept
- Where the baits can be used
- Safe operating procedures for persons handling/distributing baits.
- PPE (Personal Protective Equipment) required for bait preparation and use
- Pre-baiting and post-baiting monitoring that must be carried out on both rats and non target species
- Regulatory permits required prior to baiting, and associated reporting obligations

Company, State and National Regulation

In addition to the controls discussed in this application each forest manager operates under

a BMP or equivalent (eg, a BOP or Best Operating Practice) which stipulates compliance with a number of processes which ensures the risk of pesticide use is managed to a level that mitigates any potential impacts. The processes which BMP's consider include:

Compliance With National Regulation

In Australia the Australian Pesticides & Veterinary Medicines Authority (APVMA) is responsible for the registration and control of herbicides up to the point of retail sale. The registration process is governed by Commonwealth legislation and undertaken according to accepted scientific principles and through rigorous independent analysis by several government agencies and the APVMA. Before being registered for sale, products must go through a risk assessment process and specifically meet the requirements of the Agvet Code 5a with regard to safety of the environment and humans:

(1) An active constituent or chemical product meets the safety criteria if use of the constituent or product, in accordance with any instructions approved, or to be approved, by the APVMA for the constituent or product or contained in an established standard:
(a) is not, or would not be, an undue hazard to the safety of people exposed to it during its handling or people using anything containing its residues; and
(b) is not, or would not be, likely to have an effect that is harmful to human beings; and
(c) is not, or would not be, likely to have an unintended effect that is harmful to animals, plants or things or to the environment.
(2) For the purposes of being satisfied as to whether an active constituent meets the safety criteria, the APVMA:
(a) must have regard to the following:
(i) the toxicity of the constituent and its residues, including metabolites and degradation products, in relation to relevant organisms and ecosystems, including human beings;
(ii) the method by which the constituent is, or is proposed to be, manufactured;
(iii) the extent to which the constituent will contain impurities;
(iv) whether an analysis of the chemical composition of the constituent has been carried out and, if so, the results of the analysis;
(v) any conditions to which its approval is, or would be, subject;
(vi) any relevant particulars that are, or would be, entered in the Record for the constituent;
(via) whether the constituent conforms, or would conform, to any standard made for the constituent under section 6E to the extent that the standard relates to matters covered by subsection (1);
(vii) any matters prescribed by the regulations; and
(b) may have regard to such other matters as it thinks relevant.
(3) For the purposes of being satisfied as to whether a chemical product meets the safety criteria, the APVMA:
(a) must have regard to the following:
(i) the toxicity of the product and its residues, including metabolites and degradation products, in relation to relevant organisms and ecosystems, including human beings;
(ii) the relevant poison classification of the product under the law in force in this jurisdiction;
(iii) how the product is formulated;
(iv) the composition and form of the constituents of the product;
(v) any conditions to which its registration is, or would be, subject;
(vi) any relevant particulars that are, or would be, entered in the Register for the product;
(via) whether the product conforms, or would conform, to any standard made for the product under section 6E to the extent that the standard relates to matters covered by subsection (1);
(vii) any matters prescribed by the regulations; and
(b) may have regard to one or more of the following:
(i) the acceptable daily intake of each constituent contained in the product;
(ii) any dietary exposure assessment prepared under subsection 82(4) of the Food Standards Australia New Zealand Act 1991 as a result of any proposed variation notified

under subsection 82(3) of that Act in relation to the product, and any comments on the assessment given to the APVMA under subsection 82(4) of that Act;
(iii) whether any trials or laboratory experiments have been carried out to determine the residues of the product and, if so, the results of those trials or experiments and whether those results show that the residues of the product will not be greater than limits that the APVMA has approved or approves;
(iv) the stability of the product;
(v) the specifications for containers for the product;
(vi) such other matters as it thinks relevant.

(Agricultural and Veterinary Chemicals Code ACT 1994 – Schedule Agricultural, Commonwealth Consolidated Acts, http://www.austlii.edu.au/au/legis/cth/consol_act/aavcca1994382/sch1.html)

APVMA take a risk management approach to product registration which includes the imposition of conditions on product approvals or registrations. These conditions of use are legally enforceable strategies to reduce risk. Further, the Agvet Code regulations allow APVMA to restrict the use of certain chemicals that have a high risk profile so that only persons with additional training, licensing and compliance steps may purchase or use a pesticide. These conditions include detailed label instructions for safe use and associated Material Safety Data Sheets (MSDS) for the safe handling and application of pesticides. Label/MSDS instructions include details for mixing, treatment rates, protection of wildlife, protection of non-target plants, storage, disposal, operator safety and first-aid.

Registrants must provide the APVMA with information about the product to allow independent evaluators to decide whether it is effective and safe for people, animals and the environment, and not a trade risk. The APVMA notifies the public of the results of the evaluation and invites public comment on the registration proposal before making its decision. It also invites members of the public to participate in its programs such as reporting adverse chemical experiences through the Adverse Experience Reporting Program (AERP) and contributing to chemical reviews.

Compliance With State Regulation

State and Territory Governments are responsible for controlling the use of pesticides beyond the point of retail sale. Each state or Territory has a regulatory body or bodies responsible for pesticide use, for example in Victoria it is the Department of Environment, Land, Water and Planning, and in Western Australia, the Department of Agriculture and Food and, WA Health. All have similar legislation and codes of practice to ensure safe and effective application of registered chemicals.

For the states concerning the National Derogation applications, the relevant regulations are:

Queensland - Agricultural Chemicals Distribution Control Act 1966 (https://www.legislation.qld.gov.au/LEGISLTN/CURRENT/A/AgrChemDisA66.pdf)

South Australia - Agricultural and Veterinary Products (Control of Use) Act 2002 and Regulations 2004 (http://www.legislation.sa.gov.au/LZ/C/A/AGRICULTURAL20AND%20VETERINARY%20PRODUCTS %20%28CONTROL%20OF%20USE%29%20ACT%202002.aspx)

Tasmania-Agricultural and Veterinary Chemicals (Control of Use) Act 1995 (ndex.w3p;cond=phrase;doc_id=106%2B%2B1995%2BAT@EN%2B20040310000000;histon =;prompt=;rec=;term=Agricultural%20and%20Veterinary%20Chemicals %20%28Control%20of%20Use%29%20Act%201995)

Victoria - Version No. 004 Agricultural and Veterinary Chemicals (Control of Use) Regulations 1996 S.R. No. 71/1996 Version incorporating amendments as at 6 May 2003 (http://www.vic.gov.au/search-results.html?q=pesticide+regulation)

Western Australia – Health (Pesticides) Regulation 2011 (http://www5.austlii.edu.au/au/legis/wa/consol_reg/hr2011277/)

Each of these acts or regulations interacts with other acts, for example, in South Australia:

-Controlled Substances Act 1984

-Controlled Substances (Poisons) Regulations 1996

-Controlled Substances (Pesticides) Regulations 2003

-Dangerous Substances Act 1979 and Regulations 2002

-Work Health and Safety Act 2012 and Regulations 2012

-Environment Protection Act 1993

While these differ from state to state, since 2008, each state and Territory has agreed to a common framework for the control of use of agricultural and veterinary chemicals. As a result, the control of use is now becoming increasingly consistent across States and Territory's (COAG, 2008).

The end result for each state is that pesticides are:

-transported and stored safely
-used only by persons that are appropriately trained and where deemed necessary, licensed
-used in a way that ensures the safety of applicators and the public
-used in a way that ensures the safety of the environment
-used in an accountable manner through detailed recording of all areas of application, pesticide application methodology and environmental conditions at the time of application

Like the APVMA, states and territories take a risk management approach to pesticides and frequently there are limitations on which states or territories pesticides may be used and how they may be used in those states. For example, Fox Off fox bait (one of the most common products containing 1080) refers to specific conditions of use for different states.

Forestry Application

All certified companies have well documented policies and operational procedures, best practice manuals or similar for the use and handling of chemicals that are in alignment with State and Federal Government requirements. These include Integrated Pest Management Strategies, detailed Site operation plans and Site Specific Silviculture plans.

Staff are trained to a high level and only qualified staff or contractors, are used to carry out pest control operations. All label and MSDS instructions are adhered to. Follow-up monitoring of the impacts of the operation on the pest population and the crop is carried out.

Endangered Species

Each forest manager maps the presence of endangered species. Where the use of a highly hazardous pesticide presents a risk, either the pesticide is not used in the area or appropriate buffers or exclusions are used.

Special Management Zones

Forest managers consider special management zones whether they be environmental, scientific or cultural. Where the use of a highly hazardous pesticide presents a risk, either the pesticide is not used in the area or appropriate buffers or exclusions are used.

Site Risk Assessment

There are multiple levels of risk assessment carried out for each and every site as part of operational planning. Site-specific application plans are developed that address any known stakeholder and environmental concerns. For high risk or impact activities, adjacent

stakeholders are notified and given the opportunity to both provide feedback and influence the operation. Application plans include details of un-treated buffer zones, which are used to protect sensitive areas within, or adjacent to, the plantation. In addition to the above, application plans consider access to the site, slope, soils type, current and future climatic factors. Based on this risk assessment, appropriate application techniques, rates and timings are chosen prior to operations being undertaken. When operations are to be undertaken, further risk assessment is carried out on the day or days of operation and where circumstances have changed, most particularly climate, additional risk management is put in place or if appropriate, operations are not carried out.

2.b) (Fill in only if you represent a large or medium-scale MU)

Please describe the training program on the use of the PPE and the application of the HHP that will be implemented in the requested derogation period.

- All business involved in the direct application of sodium fluoroacetate will be required to hold relevant pest applicator licences.
- All persons involved in use of sodium fluoroacetate will be required to hold statements of attainment demonstrating their competence in the following nationally recognised units of competency.
  - AHCCHM101A Follow Basic Chemical Safety Rules
  - AHCCHM201A Apply Chemicals Under Supervision
  - AHCCHM303A Prepare and Apply Chemicals
  - AHCCHM304A Transport, Handle and Store Chemicals
- Through the completion of the units, applicators must demonstrate:
  - Understanding current chemical application issues
  - Determining suitable weather conditions
  - Safe storage requirements
  - Record keeping requirements

2.c) (Fill in only if you represent a large-scale MUs and you are applying for the renewal of a derogation)

Please indicate the conclusions of the environmental and social impact assessment related to the use of HHP occurred during the previous derogation period.

- Please refer to Appendix 3 Stakeholder Engagement Report (Appendix 3) and the Cost Benefit Analysis (Appendix 2).

2.d) Additional information (Eg: insurance providing coverages for pesticides related damage to environmental values and human health, etc.)

- Public Liability and Work Cover insurance is held to ensure that the cost of any impact on the health of the public, employees, contractors, visitors or recreational users of the forest management units or their property is covered.

3. Program to identify, investigate, and test alternatives to the 'highly hazardous' pesticide (including preventive silvicultural measures)

3.a) (Fill in only if you represent a large-scale MU)

Please describe the research program (individually or in collaboration with other research agencies/institutions or commercial enterprises) and/or field trials of alternative non-chemical or less hazardous methods of pest management that have been planned for the requested derogation period, including devoted resources and expected timelines.

While each and every Forestry organisation in Australia has a keen interest in the development of new management strategies for pest animals, the Australian Invasive Animals CRC sees the pre-eminent scientists in Australia across CSIRO and Universities collaborate with industry groups, product developers and relevant international organizations to develop strategies and comprehensively research both their efficacy and non-target impacts. Over 27 partner organizations are participating in a program of research over 7 years with funding of $72 million, more than double the annual research effort. Specifically, the CRC is engaged to:

1. finalise scientific evaluation of two biocontrol agents: Australia's first carp biocontrol agent and a new strain to boost the performance of rabbit calicivirus or RHD
2. release new products currently in the regulatory pipeline, such as new wild dog, fox and feral pig baits and delivery systems
3. build on our work through new innovative research
4. enable better uptake of our work by institutions and communities through targeted research into effective community engagement
5. enable an orderly transition to a new and sustainable national organisation.

For further information see: http://www.invasiveanimals.com/

Clearly this level of expertise and funding is beyond the capacity of the Forestry Industry or any individual business. The resources of the Plantation Forestry Industry are better utilised in this circumstance through implementing CRC outcomes, in particular adopting best management guidelines, and also contributing land area to specific research projects where possible.

Specific initiatives for the target species are detailed below**.**

3.a)(i) Introduced vertebrate pest animal management throughout mainland Australia excluding rabbits.

Of particular interest within the CRC is the development of a new pesticide for the control in particular of foxes and wild dogs (wild cats are more challenging as they prefer fresh meat). The CRC has already evaluated the efficacy and environmental risks associated with PAPP (para-aminopropiophenone) along with how humane it is compared to alternative control methods. PAPP is deemed to be more humane than 1080 as animals die more quickly with less stress and pain. The product is currently with the APVMA and it is possible that this new active will become available before the expiration of a renewed 1080 derogation which may lead to a substantial reduction in 1080 use. Any reduction in use will be subject to the APVMA registration success and any conditions of use that the APVMA and state regulatory bodies apply, along with the product cost.

The CRC has also progressed with an alternative product for wild pig control. Sodium nitrite in the form of Hoggone baits has been tested widely and is now in the final steps of product development. The baits have been formulated to be attractive to pigs and a delivery system has been developed to prevent access to other animals. It is likely that this new product would become commercially available within the life of a renewed 1080 derogation.

HQPlantations has participated in collaborative research on the use of alternative control methods (trapping) for wild pigs during the period of the previous derogation. To date 1080 baiting still remains the most viable method – as recommended by the Queensland State Government – for rapid reduction in wild pig and dog populations over large and inaccessible lands such as forests.

3.a)(ii) Rabbit control in Western Australia.

The CRC is also working to improve the level of control achieved by the RHDB (Rabbit Haemorrhagic Disease Virus). This is being carried out by; selection and evaluation of naturally occurring overseas RHDV strains shown to have improved efficacy compared with the strain now endemic in Australia; continuously developing new RHDV stains through accelerated natural selection: and identifying and assessing new potential biocontrol agents (Cox et al., 2013).

Other alternative non-chemical or less hazardous methods of pest management that have been used during the derogation period include

- Minimising potential habitat areas by controlling unwanted vegetation in plantations,
- Cultivation and ripping of sites prior to the establishment of trees to destroy rabbit warrens and,

Applications of Blood and Bone and Pelletised Poultry Manure fertilisers that act as a repellant to rabbits

3.a)(iii) Pale Field Rat management in Araucaria plantations in Queensland

The Pale Field Rat which, being a native animal is beyond the scope of the Invasive Animals CRC. However, there is research into a new pesticide, sodium nitrite that is considered more humane than existing control methods for rodents. The CRC is working to optimize the efficacy of sodium nitrite with the view to commercialising the product into the future, and potentially, within the timeframe of a 5 year derogation.

There have already been changes to silvicultural practices to reduce the impact of rats on plantation establishment. Grazing, mechanical weed control and herbicides are used to reduce the habitability of new plantations for rats. There is an effort to avoid the replanting of plantations next to recent plantation as these areas will inevitably provide a more favourable environment for rats compared with older plantations that have achieved canopy closure and are suppressing weed growth. In addition, there are plans to trial a reduced dosage rates in baits.

One of the most effective ways in which to combat pest animals is to breed for genetic resistance to pest browsing. In trees, breeders are at a relative advantage compared with grain or horticultural crops where many generations of breeding has reduced genetic diversity substantially, limiting the potential for breeding. This is leading to breeders of common horticultural and grain crops to seeking out original populations in order to source genetic diversity. In trees, few species are more advanced than 3-4 generations and in general, founders are still available to varying degrees. This means that tree breeders have a large amount of genetic diversity available to exploit. There

has been strong evidence for genetic control of resistance to animal browsing for some time (O'Reilly-Wapstra et al, 2002). Miller et al. (2011) demonstrated for *Eucalyptus globulus* that there was a strong and significant impact of genetics on the susceptibility to animal browsing. There is currently a research proposal which with support from the ARC (Australian Research Council) and the University of Tasmania, along with forest managers will look at the impact on animal browsing in *Pinus radiata* of tree genetics. Pending the success of this research, there may be scope to extend the existing research into Araucaria genetics and animal browsing characteristics. While tree species have the advantage of ample genetic diversity, there is also the limitation of long generation periods. This means that in the case of pine species for example, it can take up to 7-8 years or more depending on the maternal or paternal characteristics of a genotype, to turn over a single generation. This means that while breeding has very strong and real potential, this potential is unlikely to be realised within the typical five year derogation period.

In addition to conventional breeding resistance, molecular genetics is rapidly emerging as an important and useful technique delivered via association or genomics studies to rapidly screen breeding populations. This technology has the potential to shorten the breeding cycle dramatically for specific traits by simply picking the genotypes with the most favourable genes from the existing breeding population. An example of such resistance is currently being undertaken in *Eucalyptus globulus* with regard to resistance to the recent introduction to Australia of Myrtle Rust. With the support of forest managers and the Southern Tree Breeding Association, Researchers from Melbourne University are screening and will, as the project progresses, discover genes that control resistance to Myrtle Rust. It is already clear from the glasshouse screening trials that there are both strong levels of resistance and a genetic basis to this resistance. Overtime, this project will provide a template for resistance to pests more generally and potentially extend to the damage done by rats in Araucaria plantations.

Cox, T., Strive, T., Mutze, G., West, P. and Saunders, G. (2013). Benefits of Rabbit biocontrol in Australia. Invasive Animals Cooperative Research Centre.

Miller, A. M., O'Reilly-Wapstra, J. M., Potts, B. M. and McArthur, C. (2011). Field screening for genetic-based susceptibility to mammalian browsing. *Forest Ecology and Management*. 262(8): 1500-1506.

O'Reilly-Wapstra, J. M., McArthur, C. and Potts, B. M. (2002). Genetic variation in resistance of *Eucalyptus globulus* to marsupial browsers. *Oecologia*. 130(2): 289-296.

3.b) (Fill in only if you represent a medium-scale MU)

Please describe how you will support and/or be involved in a research program from research agencies/institutions (e.g. universities) or commercial enterprises in the requested derogation period, including devoted resources and expected timelines.

- There are no medium scale MU's who are party to this application.

3.c) (Fill in only if you represent a small-scale MU)

Please describe the program to exchange information related to pesticides use with other forest managers, to contact research institutions and/or search in alternative databases, that will be implemented in the requested derogation period.

- All small scale MU's have participated in the national process and their certification group managers are members of relevant industry research programs and this application.

3.d) (Fill in only if you are applying for the renewal of a derogation)

Please describe the programs that have been implemented to investigate, research, identify and test alternatives to the requested 'highly hazardous' pesticide, and the results.
• Research for alternatives that is being done by the broader Australian community is described in detail in Question 3.a. • Below is a summary of the work that has been done by the applicants who are applying for a renewal of a derogations to investigate, research, identify and test alternatives. This work has been targeted to specifically address the FSC Board's recommendations in their existing derogations. There are currently two derogations for this chemical in Australia
Derogation Number: FSC-DER-30-V1-0 EN Sodium Fluoroacetate Australia 01022011 and **Derogation No: FSC-DER-30-V1-0 EN Sodium Fluoroacetate Australia 12122012 (Pest species conditions)**
• These derogation relate specifically to the following elements of the current derogation.

	3.d)(i&ii) introduced vertebrate pest animal management throughout mainland Australia including rabbits.
FSC Board recommendation 1	Encourage State or community authorities or contracted staff to limit the amount of 1080 applied (kg active ingredient applied per ha) and the area treated to the minimum needed for effective control of the targeted pest organism, and to gradually reduce amount and treated area further by using alternative methods of control and taking measures to prevent damage
Applicant's response	• Forest managers ensure that the minimum amount of 1080 is used per ha and that the minimum area possible is treated. • Forest managers plan on early uptake of PAPP to enable the reduction and potentially elimination of the use of 1080. • By working in with regional baiting cooperatives, baiting campaigns are much more effective and efficient than individual landowners managing pests on their own. • Western Australian Plantation Companies work collaboratively with State environmental agencies and land care groups in the programming of 1080 applications on private land adjoining state owned lands or reserves
FSC Board recommendation 2	Encourage State or community authorities and contracted staff to manage the European red fox, European rabbit, feral cats (or other declared pest animals if required by State laws protecting native biodiversity) by developing a management strategy that aims to reduce damage to crop trees or threatened native species, giving preference to the least hazardous control methods, minimizing 1080 use, and supplement 1080 with alternatives (e.g. shooting, trapping, hunting with dogs)
Applicant's response	• The CRC for Invasive Animals provides a range of documents including a nationally focused management plan for each vertebrate pest, which consider and promote the use of non-chemical means of control such as shooting, trapping and biocontrol. • The CRC for Invasive Animals has been at the forefront of developing PAPP for vertebrate pests and sodium nitrite for rodents such as rabbits. • There are strict rules in Australia around hunting with dog's to prevent cruelty to vertebrate pests, which lead to this option not being viable. • Shooting and trapping are used wherever practical.
FSC Board recommendation 3	Take an integrated approach to management of the European red fox and other pest animal species, if required, by monitoring populations of pest species and surveying tree damage regularly, defining a 'critical action threshold' (e.g. based on maximum acceptable damage or residual trap catch during a certain time), and if the threshold is exceeded or if damage is unacceptably high (precluding silvicultural targets from being met) preferentially use control methods that are that are less hazardous than 1080, such as trapping, shooting, fumigation, fencing or use of plastic tree guards (in nurseries), chemical repellents, anti-feedant paint, etc, unless State or national law requires 1080 use within a control program for pest animals;

Applicant's response	• The IPM approach taken by forest managers has been outlined in section 1. b). • Thresholds for the various pest species have been outlined in section 1. c), although it should be noted that in most cases, this is not related to tree damage as most of the pests have no or negligible impact on crop trees. • Forest managers do use shooting and trapping to control the pest species where it is possible. • There are numerous examples of where fences have been used to eliminate the pests such as wild dogs and rabbits in Australia and these have proven ineffective, even where reinforced with shooting and trapping.
FSC Board recommendation 4	Consult with directly or potentially affected parties where 1080 is used and (especially near nature reserves/parks or sensitive areas such as wildlife habitats, rivers, lakes) consult with regional authorities for environmental protection and experts on wildlife conservation;
Applicant's response	• Forest managers provide notice to affected stakeholders prior to any operation being carried out ensuring that the opportunity to provide feedback or ask questions is provide. • Where operations are carried out, signage is used to indicate that a poison is in use to ensure that persons not normally directly affected (trespassers) are informed. • Forest managers participate in regional groups, for example the Gippsland Wild Dog Management Group and The Mary Valley and Environs Wild Dog Committee, both of which include national and state reserve managers, community members and other stakeholders. • In most cases the control programs are at the request of stakeholders including government.
FSC Board recommendation 5	Collaborate with government agencies for conservation or pest management, experts or PhD students at research institutions and universities, enterprises, and other certificate holders to improve alternative methods of controlling pest animals, including nonchemical methods, alternative poisons and an integrated management approach based on monitoring. Non-lethal methods include *chemical repellents* (e.g. aluminium ammonium sulphate (D-Ter®, or Scat®), denatonium benzoate (D-Ter®), chilli/capsicum oil (Poss Off®), and possibly also bone oil, cinnamon extract, fatty acids, garlic extract, predator odours, dustable pepper, putrid egg solids, or volatile oils), use of an *antifeedant paint* that can be applied to tree stems (based on a protein, or minerals such as silica/quartz sand), and using an emetic for conditioned taste aversion, e.g. lithium chloride (which is used to keep wolves or coyotes from preying on livestock), an anthelmintic, cyclophosmamide, bitter lupine (*Lupinus albus*), and possibly extract of artichoke leaves (*Cynara scolymus* or *C. cardunculus*). Certificate holders and research partners are strongly encouraged to explore the feasibility of using *lithium chloride* and other emetic chemicals for conditioning foxes to avoid certain foods such as poultry on farms, wild birds, and bird eggs. Fertility control still requires more research. In nurseries, planting larger and more robust seedlings may prevent some damage. In the long term, certificate holders might consider growing crop trees that are less susceptible to

	damage from pest animals, e.g. native species or mixed stands.
Applicant's response	• Given the amount of funding and the outstanding researchers involved in the Invasive Animals CRC, forest managers focus on keeping a watching brief on the outcomes. The CRC has a focus on both non chemical means of control and control using chemical means that present a lower risk to operators, the environment and non-target species. In considering alternatives, the CRC also includes an assessment of how humane the control option is. • HQPlantations is and active member on the Queensland State Lands Pest Management Committee whose objectives include research, development, coordination and implementation of best management practices for pest control across Queensland. • Forest managers have limited capacity to influence how agricultural producers manage their farms or stock. • The negation of impact on some stakeholders stock (for example through the use of feeding deterrents) does not preclude the legal compulsion for forest managers to control vertebrate pests. • Fertility control is a highly controversial area of management in pest species and the conclusions of researchers and managers has been that the release of infertile animals will continue to lead to poor conservation outcomes. • Most pest species for which 1080 is used have no impact or negligible impact on crop trees, and therefore an alternative crop species or crop protection will not impact the need to control the pests.

3.d)(iii) Pale Field Rat management in Araucaria plantations in Queensland	
Derogation No: FSC-DER-30-V1-0 EN Sodium Fluoroacetate Australia 12122012	
FSC Board recommendation 1	Employ an integrated damage mitigation strategy which supplements habitat manipulation, where necessary, with a carefully targeted control program as outlined in HQPlantations guidelines
Applicant's response	Implemented as per guidelines. Includes mechanical and chemical (non-HHP) treatment of interrows with aim of reducing rat habitat. Establishment planning aims to break up the age class matrix of Araucaria plantations to ensure large contiguous areas of a single age are not created.
FSC Board recommendation 2	Limit the use of 1080 for rat control to susceptible areas with steep terrain (slope greater than15 degrees) which cannot be readily accessed for manual or mechanical control (such as early-age weed control, inter-row tending, cattle grazing, etc) and where the rat density index estimated in a pre-bait census exceeds the threshold (for the corresponding age of forest stand);
Applicant's response	Generally implemented. If non-chemical methods implemented on flatter terrain fail to adequately control populations then baiting may be considered as a last resort.
FSC Board recommendation 3	Use sweet potato baits, keep application rate clearly below the maximum allowed by APVMA's Minor Use Permit (6 kg bait per ha, containing no more than 0.5 g/kg of sodium fluoroacetate), and reduce the amount of 1080 applied in affected susceptible areas to the minimum needed for effective control to achieve silvicultural targets;
Applicant's response	Implemented. Trials are planned to test lower application rates during the next instance baiting is required, following advice from independent experts.
FSC Board recommendation 4	Strictly adhere to all conditions for a Damage Mitigation Permit which will be issued annually on request by the State of Queensland Department of Environment and Heritage Protection (DEHP), in particular the requirement to: • refrain from spreading baits on areas of bare ground; • regularly search for, recover, and burn or bury all dead rodents throughout the duration of the baiting program and maintain a buffer zone of 50 metres free of baits at all times in areas where hoop pine compartments adjoin natural vegetation; • monitor non-target species pre and post baiting at selected sites, based on vehicle and foot-based daylight and spotlight transects, including native forest edges; • evaluate each baiting program and report results to Department of Heritage & Environmental Protection (DEHP); and; • report any fatalities of non-target wildlife to DEHP.
Applicant's response	Implemented. Best management practices containing above operational requirements are implemented by trained staff. Monitoring of non-target species is undertaken pre and post baiting with results reported as a part of the annual baiting report required by the regulator. Any fatalities of non-target wildlife are also reported to the regulator (DEHP).

FSC Board recommendation 5	Request a new Damage Mitigation Permit from DEHP for each season 1080 shall be used for controlling pale field rats; report annually to APVMA (including non-target fauna surveys); and record treated area, total annual use of 1080 (active ingredient) and include data in audit reports;
Applicant's response	Implemented in full. Damage Mitigation Permits are obtained and kept on file and annual reports are provided to both APVMA and DEHP covering all required information.
FSC Board recommendation 6	Identify the location of sensitive areas (land adjoining rivers, streams, lakes, or natural habitat) and map buffer zone excluded from control prior to baiting, as outlined in company guidelines;
Applicant's response	Operations plans are developed prior to baiting activites being undertaken. Plans include detailed maps showing all exclusion zones and other relevant site information required to undertake the work safely. Workers are inducted into the requirements of the Operations Plan.
FSC Board recommendation 7	Take all the measures required in Queensland for mitigating risks of 1080, in particular: • safety measures required by directions in the APVMA's Minor Use Permit and on product label; • State or national laws for protecting workers (adequate protective equipment, training, licenses) and non-target wildlife (colouring baits green, hidden placement, etc); • measures in guidelines on 1080 use; and • notify neighbours and relevant local stakeholders prior to control.
Applicant's response	Best management practices cover all environmental and safety requirements relevant to the preparation, transport, handling, application and disposal/clean up of 1080 baits. The BMP covers all regulatory requirements and also contain emergency procedures in the event that someone is exposed to the chemical. All personnel involved in baiting operations are trained in BMPs just prior to operations occurring and training records are maintained.
FSC Board recommendation 8	Promote natural enemies of rodents in susceptible areas, for example by erecting nesting boxes and perching poles for owls and raptors,5 or by restoring more natural vegetation or providing conservation zones on part of the management unit (proportionate to the scale of activities);
Applicant's response	The DFA is comprised of a matrix of native forest buffer areas in and around the plantation providing adequate habitat for predatory birds.
FSC Board recommendation 9	Collaborate with government agencies, scientific experts or PhD students at research institutions (e.g. CSIRO, IACRC) and universities, commercial enterprises, or the timber industry (FWPA, AFG, AFPA), for example by participating in field trials on alternative methods for managing damage caused by rats, e.g. use of anti-feedant paint for protecting seedlings (based on proteins or a suspension of silica), chemical repellent (such as rosin, wood tar, cinnamon extract, etc), or the potential of using an emetic for conditioned taste aversion (to induce avoidance of bark).

Applicant's response	To the limited scope available, the impacted forest grower collaborates with external research providers on improving the best management practices for rat control. The periodic nature of plague outbreaks of the pest together with the small region and individual crop at risk mean that there is limited scope for large scale research and resourcing for this problem. The integrated pest management strategy currently implemented is the result of collaborative research into the biology and ecology of the pest and plans are in place to test reduced rates of 1080 following advice from experts. The grower also keeps abreast of potential alternative, less harmful, rodenticide products which could possibly be used to replace 1080.

4. Stakeholder consultation

4.a) Please indicate the dates when the stakeholder consultation was conducted.

- Stakeholder consultation was commenced on the 25th of September 2015, with the distribution of letters, information and a survey to stakeholders. All draft derogations were published on the FSC Australia website.
- From the 28th of September to the 16th of November stakeholders were encouraged to meet with forest manager's representatives.
- The initial opportunity for stakeholders to provide feedback to forest managers ceased on the 16th of November.
- A webinar public forum was held on the 23rd of November, however due to technical issues was not very successful.
- As recommended by the FSC Australia Board an advisory group was formed including an environmental expert and a social expert to provide advice and suggestions around the derogation applications and the stakeholder feedback received. The advisory group first met on the 24th of November.
- After consultations with the advisory group, revised derogation applications were made available for public comment again on the FSC Australia website from 22nd of December until the 24th of January.
- The advisory group will meet again on the 29th of January to discuss any further stakeholder comment and input.

4.b. Please indicate which affected stakeholders (eg. neighbouring, local communities, forest workers) have been consulted. Neighbours, local communities, other forestry companies, silviculture contractors and customers.

- Please refer to the Stakeholder Engagement Report (Appendix 3).

4.c. Please indicate other stakeholders consulted (e.g. government agencies for environmental protection or public health, scientific experts, regional/local authorities and associations, representatives of hunters, farmers or non-governmental organizations).

- Please refer to the Stakeholder Engagement Report (Appendix 3).

4.d. Please describe the information on hazards, intended use of the HHP and commitment to prevent, mitigate and/or repair damage to environmental values and human health that has been provided to stakeholders.

- Summary information on each relevant pesticide was provided to all stakeholders, including:
  - The hazardous attributes of the pesticide which led to it appearing on the FSC Highly Hazardous list.
  - Why forest managers use the pesticide as part of their forest management practices
  - Controls which forest managers put in place to mitigate the risk the pesticide presents
  - Efforts forest managers are making to avoid or reduce the need to use the pesticide
  - Research underway to seek alternatives to the pesticide
  - Copies of draft applications for derogations.
- A copy of the pesticide summary provided to stakeholders is included in the attached Stakeholder Engagement Report (Appendix 3).

4.e. Please describe the consultation mechanism (i.e. public notices in local newspapers or on local radio stations, letters sent to potentially affected persons, meetings, field observations etc.) used to inform, consult and receive significant feedback.

- A range of stakeholder consultation mechanisms have been utilised, commencing with emails or letters to known stakeholders to participate in the derogation consultation process. Information was also posted on forest manager websites and on the website of FSC Australia. This information included:
  - Downloadable information (technical and jargon free) regarding the derogation application detailing the pesticides, their hazards, rationale of continues use, intended use and management strategies to mitigate potential impacts, including weblinks to other information sources (e.g. FSC).
  - Information regarding stakeholder consultation opportunities, including a summary of the engagement plan.
  - A link to the online survey and contact information to request hardcopy or telephone survey options.
  - Information regarding public comment submissions, including a link to the public comment template and return options (email and postal address).
  - Contact information to talk with a company representative to provide feedback in person or over the telephone.
  - Online forums and recordings of these for download (if requested).
  - Contact information for the National Coordinator.
- Upon request hardcopy information packs were provided with relevant information.

4.f. Please summarize the comments received and how stakeholder concerns were addressed. (Where necessary, the original stakeholder comments may be requested).

- Please refer to Appendix 3 – Stakeholder Engagement Report (Appendix 3).

5.Certification Body Evaluation of the compliance with the requirements of the previous derogation approval

(To be filled in by the certification body only in renewal applications)

a. *Please confirm if during the previous derogation period the applicant has identified and located on maps the streams, rivers, lakes and other water zones, as well as buffer zones and other sensitive areas (e.g. groundwater zone providing water for public consumption, natural reserves, conservation zones and protection areas for rare and threatened species, or habitat with biodiversity refuge.*

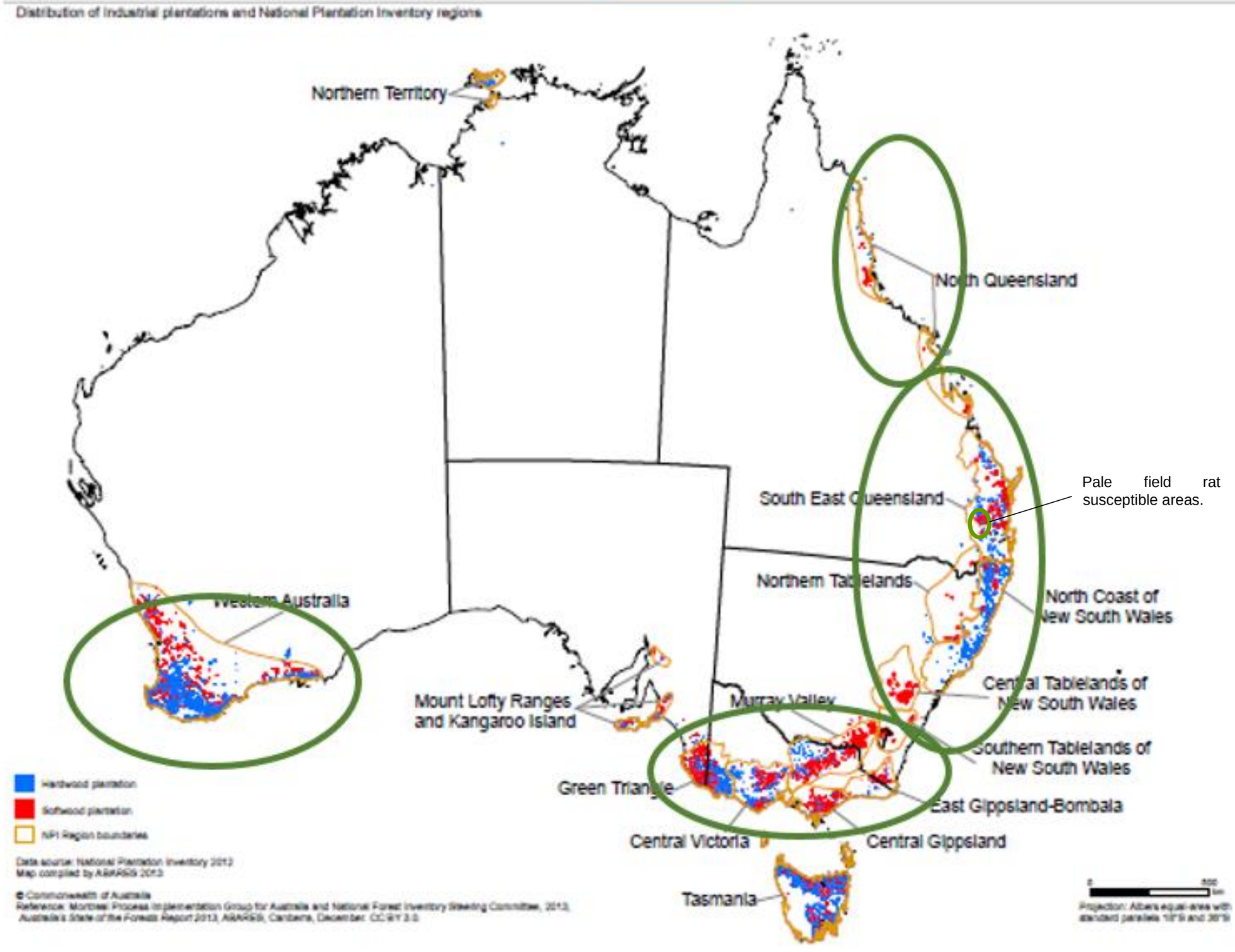
b. *Please confirm if during the previous derogation period the applicant has effectively implemented control measures to prevent, minimize and mitigate negative social and environmental impacts associated with the use of the 'highly hazardous' pesticides.*

c. *Please confirm if during the previous derogation period workers dealing with HHP were provided with appropriate training on the use of the PPE and the application of the HHP.*

d. *Please confirm if during the previous derogation period workers dealing with HHP were provided with appropriate personal protective equipment (PPE) and the use of them was enforced.*

e. *Please confirm if the applicant has implemented all the conditions set by the Pesticides Committee as part of the derogation approval.*

Appendix 1. Map of plantation areas involved in the Sodium Fluoracetate derogation application



Appendix 2a. Cost Benefit Analysis. 1080 For use in Control of rabbits (Western Austrtalia only) and rats (Queensland only) where damage to trees is occuring and major

Stakeholder Feedback:

Stakeholders were highly concerned about the off-site impacts of 1080 on domestic animals, and the broader impact on non-target native species (apart from Western Australia). In Western Australia there was a greater acceptance and demand for the use of 1080 due to its effectiveness, use in broader public pest control programs, and reduced toxicity to native animals. Stakeholders would prefer to see non-toxic alternatives used such as tree guarding and fencing.

		Economic Impacts		Environmental Impacts		Social Impacts			Overall Outcome
		Criteria 1	Criteria 2	Criteria 1	Criteria 2	Criteria 1	Criteria 2	Criteria 3...	
	Control Regime Description	**Basic NPV type analysis (item 1.5)**	**Other economic impacts**	**Onsite impacts**	**Off-site impacts**	**Worker health and safety**	**Impacts on neighbours**	**Legal compliance**	
No use of 1080	*1080 will not be used. Alternatives will be used where applicable (e.g. tree guarding, fencing, shooting, ripping of rabbit warrens where possible, application of Pindone).*	Using fencing or treeguards provides a NPV of -$56/ha and an IRR of -9% despite the savings on the 1080 program	Alternative treatements to 1080 are possible but extremely expensive and usually less effective. Rabbit and rat proof fencing costs at least $600 per hectare not including the initial eradication of the pest and ongoing maintenance of the fence. These costs are 500% greater than the cost of treating with 1080. Tree guarding is viable in small areas of high value crops such as a seed orchard or immediately adjacent to a neighbour however on a broadacre basis costs 50 cents to $1.00 per tree and hence is also an increase of over 500% in cost. In addition treegurads causes a waste problem and are not viable for trees older than 6 months when they are still vulnerable to rabbits and rats.	**MODERATE**: Risk to non-target species from 1080 poisoning is eliminated, reduced program effectiveness in controlling environmental pests (e.g. rabbits). Use of alternative HHP pesticide Pindone presents risk to on-site non-target species. Issue of use of additional plastic, steel etc in fence and or guards	**MODERATE**: Risk to non-target species from 1080 poisoning is eliminated, reduced program effectiveness in controlling environmental pests (e.g. rabbits). Use of alternative HHP pesticide Pindone presents risk to on-site non-target species. Issue of use of additional plastic, steel etc in fence and or guards	**MODERATE**: Increased worker risk associated with increase in manual labour for some alternatives. Increased safety risk to workers due to larger shooting programs across the landscape to control pest species. Reduced worker risk by eliminating the handling of a poison.	**MODERATE:** Risk of 1080 contamination and associated non-target toxicity elimintated. Increased risk to human safety due to increased use of firearms across landscape. Increased grazing pressures from pest species on adjacent properties. Reduced effectiveness of broader pest control programs across the landscape.	**MODERATE:** Risk of non-compliance with legal requirement to effectively control pest species such as rabbits.	🔴 greatly increased cost, and risks to human safety affect the viability of this option. Reduced effectiveness and success.
Use of 1080 in compliance with existing regulations	*Compliance with regulations*	This alternative provides an NPV of $248/ha and an IRR on the investment of 233%	The use of 1080 is effective and efficient,	**MODERATE**: Risk to non-target species from 1080 poisoning exists but is be reduced through best-practice baiting approaches.	**MODERATE**: Risk to non-target domestic species from 1080 poisoning exists but is reduced through a comprehensive notification process. Risk to off-site non-target species reduced through a monitored baiting and clean-up program and best practice baiting.	**LOW**: Worker risk minimised due to controlled pesticide application procedures and reduced need for manual work.	**MODERATE:** Risk of off-site 1080 contamination and associated non-target toxicity including domestic animals. Effective pest control programs across the landscape.	**LOW:** Compliance with legal requirement to effectively control pest species.	🟢 Low cost, good control of pest populations, and improved risk to human safety make this option viable.
Use of 1080 in compliance with existing regulations (WA Only)	*Compliance with regulations*	This alternative provides an NPV of $248/ha and an IRR on the investment of $233%	The use of 1080 is effective and efficient,	**LOW**: Risk to non-target native species from 1080 poisoning is reduced due to naturally occurign substance. Risk to non-target domestic species is reduced through best-practice baiting approaches.	**LOW**: Risk to non-target domestic species from 1080 poisoning is reduced through a comprehensive notification process. Risk to off-site non-target native species mitigated as not susceptible to the pesticide.	**LOW**: Worker risk minimised due to controlled pesticide application procedures and reduced need for manual work.	**MODERATE:** Risk of off-site 1080 contamination and associated non-target toxicity including domestic animals. Effective pest control programs across the landscape.	**LOW:** Compliance with legal requirement to effectively control pest species.	🟢 Low cost, good control of pest populations, reeduced risk to non-target native species, and improved risk to human safety make this option viable.
Use of 1080 with additional preventative controls	*Control Regime: In high risk environments (e.g. near houses) non-toxic alternatives to be used (e.g. tree guards, warren ripping, fencing, shooting)*	This alternative provides an NPV of $105/ha and an IRR on the investment of $48%	The use of 1080 is effective and efficient but can be made safer in sensitive locations particularly on high value trees.	**LOW**: Risk to non-target species from 1080 poisoning is further reduced through less 1080 being applied particularly in sensitive areas. Use of the alternative rabbit control pesticide Pindone is also risk to non-target species.	**LOW**: Risk to non-target species from 1080 poisoning is further reduced through less 1080 being applied particularly in sensitive areas. Use of the alternative rabbit control pesticide Pindone is also risk to non-target species.	**MODERATE**: Increased worker risk associated with increase in manual labour for some alternatives. Increased safety risk to workers due to larger shooting programs across the landscape to control pest species.	**LOW:** Risk of off-site 1080 contamination and associated non-target toxicity including domestic animals reduced particularly in proximity to neighbours. Potential for increased prevalence of pest species due to reduced efficacy of control programs.	**LOW:** Risk of non-compliance with legal requirement to effectively control pest species.	🟠 Moderate cost, poorer localised control of pest populations, reduced risk to non-target domestic species make this option potentially viable in those locations where alternatives are feasible and not cost prohibitive.

Appendix 2a. Cost Benefit Analysis. 1080 For use in Control of rabbits (Western Austrtalia only) and rats (Queensland only) where damage to trees is occuring and major

NPV (@5%) and IRR of using 1080 to control plantation damaging pests

Discount Rate	5%
Net Present Value ($/ha)	$248.53
Internal Rate of Return (%)	233%

	Year	1	2	3	4	5
Treatment Costs ($/ha/yr)		120	0	0	0	0
	Details					
Materials	1080 baits	20				
Labour	Application	100				
Predicted Gains ($/ha/yr)		0	400	0	0	0
	Details					
Additional Growth						
Losses Averted			400			
Gains - Costs		-120	400	0	0	0

Assumes that you save $400 in year 2 by avoiding respray, repfill plants and replanting. Ignores lost growth of one year and the fact you may lose some of the refills
This does not include the added costs if you did not control the rabbits or rats of the population increasing
Also in the case of rats an entire plantation can be lost up to the age of 8 years which would have implications far exceeding these low 1 year replanting costs.

NPV (@5%) and IRR of using fencing or tree gurads to control plantation damaging pests

Discount Rate	5%
Net Present Value ($/ha)	-$56.24
Internal Rate of Return (%)	-9%

	Year	1	2	3	4	5
Treatment Costs ($/ha/yr)		560				
	Details					
Materials	Fencing	280				
Labour	Application	280				
Predicted Gains ($/ha/yr)		120	400	0	0	
	Details					
Additional Growth						
Losses Averted		120	400			
Gains - Costs		-440	400			

Assumes that you save $400 in year 2 by avoiding respray, repfill plants and replanting. Ignores lost growth of one year and the fact you may lose some of the refills
Assumes that you save $120 in year 1 by avoiding the use of 1080 but cost of fencing or tree guarding is over $560/ha excluding initial pest eradication and fence/guard maintenance
Also in the case of rats an protection is needed for up to 8 years if they are not controlled.

NPV (@5%) and IRR of using 1080 with additional controls of treeguarding or other methods in sensitive locations

Discount Rate	5%
Net Present Value ($/ha)	$105.67
Internal Rate of Return (%)	48%

	Year	1	2	3	4	5
Treatment Costs ($/ha/yr)		270	0	0	0	0
	Details					
Materials	Tree guards + 1080	120				
Labour	Tree guards + 1080	150				
Predicted Gains ($/ha/yr)		0	400	0	0	0
	Details					
Additional Growth						
Losses Averted			400			
Gains - Costs		-270	400	0	0	0

Assumes that you save $400 in year 2 by avoiding respray, repfill plants and replanting. Ignores lost growth of one year and the fact you may lose some of the refills
This does not include the added costs if you did not control the rabbits or rats of the population increasing
Als in the case of rats an entire plantation can be lost up to the age of 6 years which would have implications far exceeding these low 1 year replanting costs.

Appendix 2b. Cost Benefit Analysis. 1080 For use in Control of Foxes, Wild Dogs, Feral Cats, Pigs and Rabbits (WA only), where damage to trees is not occuring or minor

Stakeholder Feedback:

Stakeholders were highly concerned about the off-site impacts of 1080 on domestic animals, and the broader impact on non-target native species (apart from Western Australia). In Western Australia there was a greater acceptance and demand for the use of 1080 due to its effectiveness, use in broader public pest control programs, and reduced toxicity to native animals. Stakeholders would prefer to see non-toxic alternatives used such as tree guarding and fencing.

		Economic Impacts		Environmental Impacts		Social Impacts			Overall Outcome
		Criteria 1	Criteria 2	Criteria 1	Criteria 2	Criteria 1	Criteria 2	Criteria 3...	
	Control Regime Description	**Basic NPV type analysis (item 1.5)**	**Cost of alternatives**	**Onsite impacts**	**Off-site impacts**	**Worker health and safety**	**Impacts on neighbours**	**Legal compliance**	
No use of 1080	*1080 will not be used. Alternatives will be used where applicable (e.g. shooting, , application of Pindone).*	Pest control as part of a legislative requirement, community program or Government lead program does not lend itself to a convention econmomic analysis.	Cost of running a shooting, trapping, fencing program is many times that of a targeted 1080 baiting program in cooperation with either the local community or Government agencies.	MODERATE: Risk to non-target species from 1080 poisoning is elimintated. Reduced program effectiveness in controlling pests (e.g. foxes, feral cats, wild dogs, pigs). Increases risk to conservation of native species . Use of alternative HHP pesticide Pindone presents risk to on-site non-target species and is less effective on larger pests.	MODERATE: Risk to non-target species from 1080 poisoning is elimintated. Reduced program effectiveness in controlling pests (e.g. foxes, feral cats, wild dogs, pigs). Increases risk to conservation of native species . Use of alternative HHP pesticide Pindone presents risk to on-site non-target species and is less effective on larger pests.	**MODERATE**: Increased worker risk associated with increase in manual labour for some alternatives. Increased safety risk to workers due to larger shooting programs across the landscape to control pest species.	**MODERATE:** Risk of 1080 contamination and associated non-target toxicity elimintated. Outrage from neighbours because of poor pest control on forestry land impacting on surrounding land. Increased risk to human safety and noise pollution due to increased use of firearms across landscape. Increased grazing pressures from pest species on adjacent properties. Reduced effectiveness of broader pest control programs across the landscape. Poorer conservation outcome.	MODERATE: Risk of non-compliance with legal requirement to effectively control pest species. Inability to work with Government Departments such as National Parks and Land Agency on joint pest control programs as 1080 is the main control agent used.	🔴 vastly increased cost, potential detrimental impacts on native species due to reduced control of pest populations, and risks to human safety affect the viability of this option.
Use of 1080 in compliance with existing regulations	*Compliance with regulations*	Pest control as part of a legislative requirement, community program or Government lead program does not lend itself to a convention econmomic analysis.	Cost of using 1080 in compliance with existing regulations is very low and many times less that the alternatives which are also less effective.	MODERATE: Risk to non-target species from 1080 poisoning exists but is reduced through best-practice baiting approaches. Conservation of native species protected from predatory pests (e.g. foxes, feral cats, wild dogs and pigs) by known effective control programs.	MODERATE: Risk to non-target domestic species from 1080 poisoning exists but is reduced through a comprehensive notification process and best practice baiting procedures. Risk to off-site non-target native species reduced through a monitored baiting and clean-up program. Conservation of native species protected from predatory pests (e.g. foxes, feral cats, wild dogs, pigs) by known effective control programs.	**LOW**: Worker risk minimised due to controlled pesticide application procedures and reduced need for manual work.	**MODERATE:** Risk of off-site 1080 contamination and associated non-target toxicity including domestic animals. Effective pest control programs across the landscape. Reduced Impact of feral pests on neighbouring properties. Conservation of native species protected from predatory pests (e.g. foxes, feral cats, wild dogs, pigs) by known effective control programs.	**LOW:** Compliance with legal requirement to effectively control pest species. Ability to work with Government Departments such as National Parks and Land Agency on joint pest control programs as 1080 is the main control agent used.	🟢 Moderate cost, moderate control of pest populations, and improved risk to human safety make this option viable.
Use of 1080 in compliance with existing regulations (WA Only)	*Compliance with regulations*	Pest control as part of a legislative requirement, community program or Government lead program does not lend itself to a convention econmomic analysis.	Cost of using 1080 in compliance with existing regulations is very low and many times less that the alternatives which are also less effective.	LOW: Risk to non-target native species from 1080 poisoning exists but is reduced due to naturally occurign substance. Risk to non-target domestic species is reduced through best-practice baiting approaches. Conservation of native species protected from predatory pests (e.g. foxes, feral cats, wild dogs, pigs) by known effective control programs.	LOW: Risk to non-target domestic species from 1080 poisoning exists but is reduced through a comprehensive notification process. Risk to off-site non-target native species mitigated as not susceptible to the pesticide. Conservation of native species protected from predatory pests (e.g. foxes, feral cats, wild dogs, pigs) by known effective control programs.	**LOW**: Worker risk minimised due to controlled pesticide application procedures and reduced need for manual work.	**MODERATE:** Risk of off-site 1080 contamination and associated non-target toxicity including domestic animals. Effective pest control programs across the landscape. Reduced Impact of feral pests on neighbouring properties. Conservation of native species protected from predatory pests (e.g. foxes, feral cats, wild dogs, pigs) by known effective control programs.	**LOW:** Compliance with legal requirement to effectively control pest species. Ability to work with Government Departments such as National Parks and Land Agency on joint pest control programs as 1080 is the main control agent used.	🟢 Low cost, good control of pest populations, reeduced risk to non-target native species, and improved risk to human safety make this option viable.
Use of 1080 with additional preventative controls	*Control Regime: 1080 to be used as a last resort with other approaches to be considered first. In riskier environments (e.g. near houses) non-toxic alternatives to be used (e.g. warren ripping and shooting)*	Pest control as part of a legislative requirement, community program or Government lead program does not lend itself to a convention econmomic analysis.	Cost of using 1080 in compliance with existing regulations plus additonal preventative controls is relatively low and much less that the alternatives which are also less effective.	LOW: Risk to non-target species from 1080 poisoning exists but is reduced through less 1080 being applied. Effectivess of alternatives may increase risk to the conservation of native species protected from predatory pests (e.g. foxes, feral cats, wild dogs, pigs). Use of the alternative rabbit control pesticide Pindone is a risk to non-target species.	LOW: Risk to non-target species from 1080 poisoning exists but is reduced through less 1080 being applied. Effectivess of alternatives may increase risk to the conservation of native species protected from predatory pests (e.g. foxes, feral cats, wild dogs, pigs). Use of the alternative rabbit control pesticide Pindone is a risk to non-target species.	**MODERATE**: Increased worker risk associated with increase in manual labour for some alternatives. Increased safety risk to workers due to larger shooting programs across the landscape to control pest species.	**LOW:** Risk of off-site 1080 contamination and associated non-target toxicity including domestic animals reduced. Potential for increased prevalence of pest species due to reduced efficacy of control programs. Reduced Impact of feral pests on neighbouring properties. Conservation of native species protected from predatory pests (e.g. foxes, feral cats, wild dogs, pigs) by known effective control programs.	**LOW:** Risk of non-compliance with legal requirement to effectively control pest species. Inability to work with Government Departments such as National Parks and Land Agency on joint pest control programs as 1080 is the main control agent used.	🟠 Moderate cost, reasonable control of pest populations, reduced risk to non-target species make this option potentially viable in those locations where alternatives are feasible and not cost prohibitive.

Appendix 3. Stakeholder report 1080

Report Overview

The following report provides a summary of the outcomes of the FSC Highly Hazardous Pesticide Derogation stakeholder feedback, including survey responses and additional feedback received from public comments and communication with forest company representatives.
This feedback was used by the independent advisory group in making recommendations to forest managers regarding pesticide acceptance and preferred conditions of use. These recommendations were then consideration in the further development of the various derogation applications.

Overall stakeholder response
In total 125 stakeholders have provided feedback on the derogations applications as December 21, 2015. This includes 75 survey respondents and 50 stakeholders who participated through providing public comment and communication with the National Coordinator or forest company representatives. Many survey respondents also provided feedback through other approaches such as email and/or communication with forest company representatives.
The majority of survey respondents were individuals living on or owning properties adjacent to forested areas (63%) as shown in **Table 1**. These high numbers of stakeholders who live on or adjacent to forest areas was expected given that forest companies primarily approached those stakeholders registered on company databases for stakeholder feedback. The number of survey respondents identifying as being members of environmental groups was lower than anticipated given the typically high level of interest of such groups in forestry issues.

Table 1: Types of stakeholders who participated in feedback opportunities

Stakeholder Type (n=75)	No. Survey Responses	% of Survey Responses	No. Comment Responses	Total % of Responses
I am a member of an environmental group with an interest in forestry activities	5	7%	4	7.2%
I am a member of the general public with an interest in forestry activities	10	13%	4	12.8%
I live on a property adjacent to or near a forested area (native forest and/or plantation forest)	22	29%	1	18.4%
I own or manage land adjacent to near a forested area (native forest and/or plantation forest)	18	24%		14.4%
I work, or used to work, within the forest industry	11	15%		8.8%
My business, or place of employment, is impacted by forestry activities	4	5%	4	6.4%
Government	3	4%	2	4.0%
Other, or unknown	2	3%	35	29.6%

State of origin (survey respondents only)
Survey respondents were predominantly from Tasmania (49%), followed by Victoria (35%) and Western Australia (9%) (**Figure 1**), with very little response from other jurisdictions. The majority of survey respondents were potentially affected stakeholders from rural and regional areas, with 51% living on a rural property and a further 29% in regional and rural towns (**Figure 2**).

Figure 1: State of origin of survey respondents (n=75)

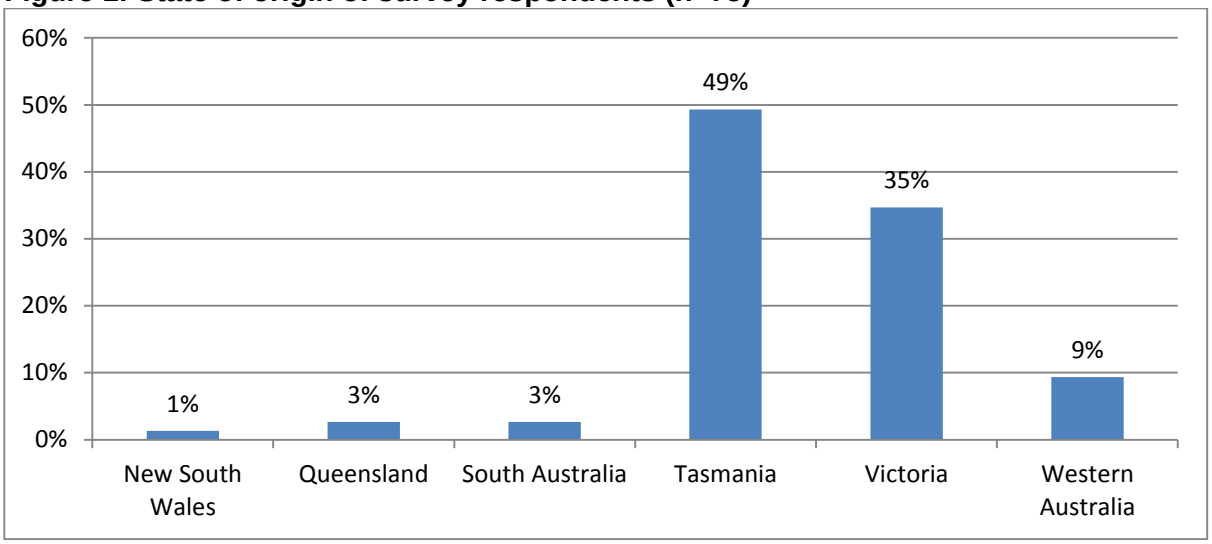
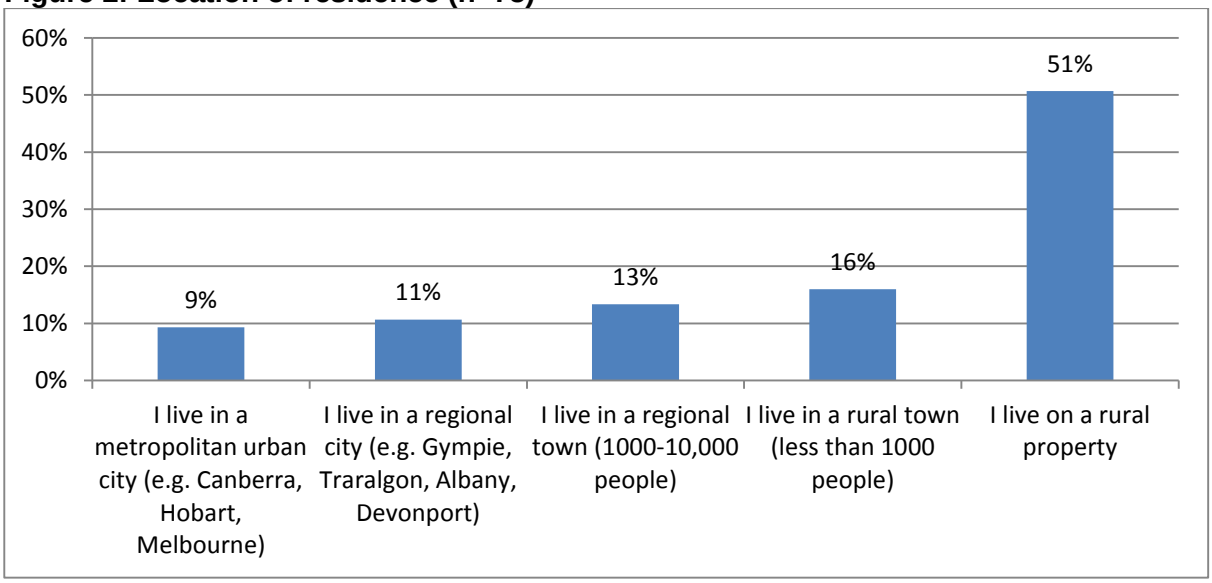


Figure 2: Location of residence (n=75)

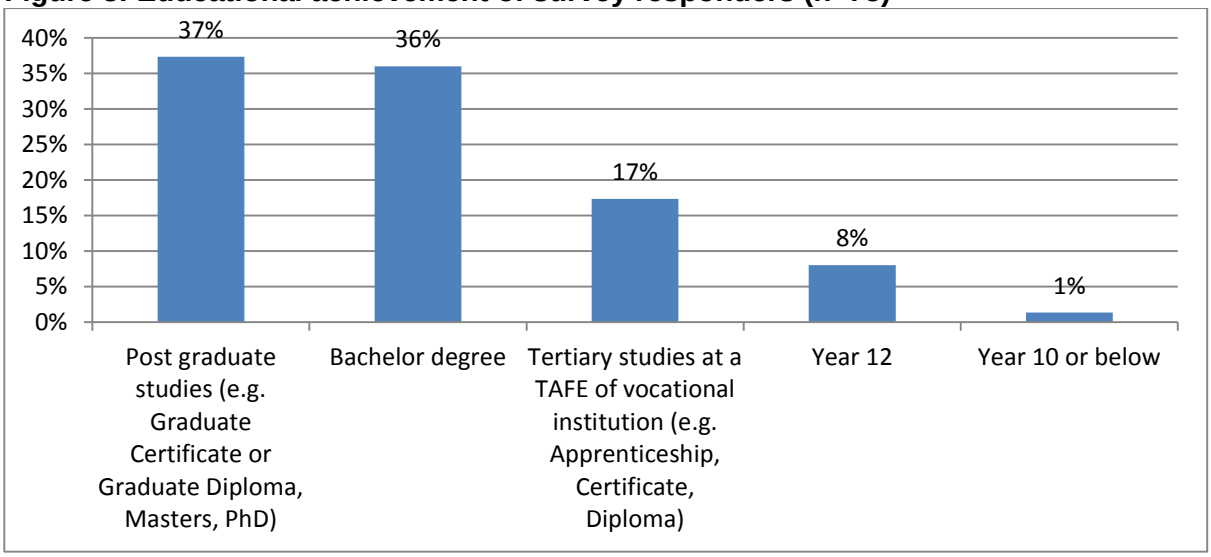


Survey responder demographics

Of the 75 survey respondents 41% were female, 55% male and 4% preferred not to state their gender. This represents a higher sample of men to women; however this is a good sample of women, with rural and regional women not often completing surveys pertaining to rural matters.

Survey respondents were highly educated as shown in **Figure 3**, with 74% of stakeholders have a bachelor degree or higher. While this is not representative of the general Australian public with a substantially higher level of education reported, it is indicative of the education levels of those individuals interested in forest management with forest managers reporting that this level of education is typical of their stakeholder registers.

Figure 3: Educational achievement of survey responders (n=75)



Stakeholder interest in derogation applications

As indicated in

Table 2 the majority of survey comments were in regards to Tasmanian derogation applications. Some stakeholder comments were received for pesticides not under application for that jurisdiction (e.g. 1080 received 5 comments from Tasmania despite Tasmanian companies not seeking a derogation for this pesticide). This widespread interest highlights the level of concern of stakeholders regarding the use of pesticides.

Table 2: Stakeholder interest in derogation applications by state (n=75)

Pesticide commenting on*	NSW	QLD	SA	TAS	VIC	WA	Total
1080	0	0	1	5	15	4	25
Amitrole	0	0	1	5	5	2	13
Alpha-cypermethrin	0	1	1	28	5	2	37
Fipronyl	0	0	0	24	7	1	32
Cuprous Oxide	0	0	0	2	8	1	11
Copper Sulphate	0	0	0	2	1	0	3
Picloram	0	0	0	3	2	1	6
Glufosinate ammonium	0	0	0	4	3	1	8
Pindone	0	0	0	4	2	5	11
All Derogation Applications	1	1	1	9	11	3	26
Total	1	2	4	86	59	20	172
	1%	*1%*	*2%*	*50%*	*34%*	*12%*	
Note – due to a change by FSC International derogations are now only being sought for 1080, Amitrole, Alpha-Cypermethrin and Fipronil pesticides							

Table 3 provides a breakdown of the company derogations survey respondents provided comment on, highlighting the high focus of stakeholders on Tasmanian and to a lesser extent Victorian forest companies derogations.

Table 3: Company derogations commented on (n=75)

Derogations Commenting On	Number of respondents
Albany Plantations Fibre Limited (WA)	14
Hancock Queensland Plantations – HQP (QLD)	8
PF Olsen (Aus) Pty Ltd (VIC, SA, QLD, WA)	20
Australian Bluegums Ltd (VIC, SA, WA)	25
Forestry Tasmania	41
Hancock Victoria Plantations - HVP (VIC, SA)	20
WAPRES(WA)	14
Bunbury Fibre (WA)	13
Forico (TAS)	30
SFM (TAS, VIC, SA)	26
National Coordinator (Pinnacle Quality)	9

Initiation of stakeholder participation

The majority of survey respondents were attracted to the stakeholder feedback process through invitations received from local forest company(s) or friends (see **Table 4**). Participation through environmental group dissemination of invitations was very low. Public comment feedback provided some insights into this potential low rate of interest from environmental groups, with a poor perception of FSC engagement processes and hence a lack of interest in participating due to perceived no influence on the process.

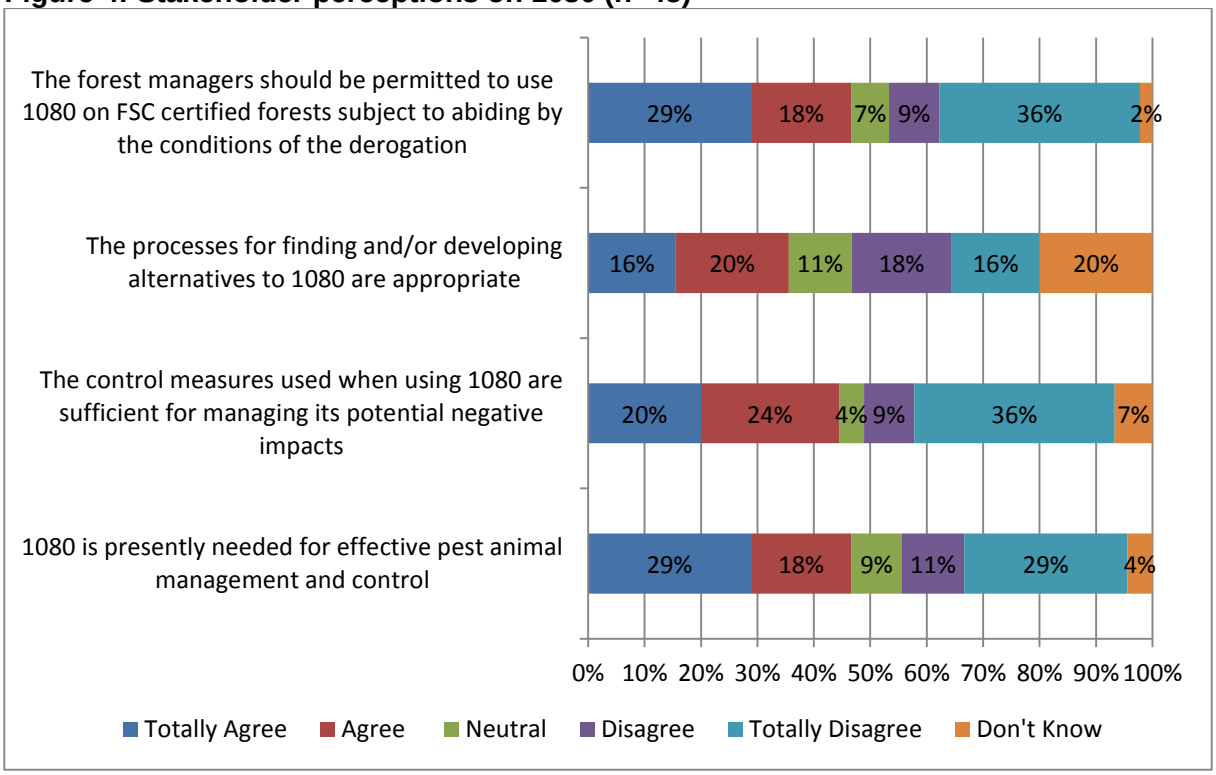
Table 4: Participant involvement initiation (n=75)

Participation Initiation	Response	% Responses
Direct email invitation from my local forest company	39	52%
Direct email invitation from the National Coordinator (Kevin O'Grady)	2	3%
Forest company website	4	5%
FSC Australia website	4	5%
Information was provided to me from a friend	23	31%
Information was provided to me from an environmental group	2	3%
Information was provided to me from through my place of work	8	11%

Feedback on Derogation Applications - 1080

Survey respondent's acceptance of 1080 was fairly evenly distributed and consistent across the questions. As shown in
Figure 4, 47% of respondents agree that 1080 should be permitted and 45% disagree, 7% were neutral. Similarly 47% of respondents felt that 1080 was needed for effective pest control, 40% disagreed that it was needed, and 44% perceived control measures used were sufficient compared to 45% who see them as insufficient.

Figure 4: Stakeholder perceptions on 1080 (n=45)



The disparity of views on 1080 was echoed in the broader stakeholder feedback, with many stakeholders concerned about the impact of 1080 on non-target species, including domestic animals:

"I have lost 2 dogs to 1080 poisoning. It is a cruel poison resulting in a horrendous death for the animal (whether pest or pet). There is no way to guarantee that non-targeted species will not be affected, nor that animals will not unduly suffer."

"1080 is a cruel and inhumane pesticide that also impacts native wildlife"

However, there was also recognition that 1080 is an effective pest control method capable of mitigating impact of pest animals on wildlife:

"Australian wildlife is being decimated by introduced predators. Unfortunately poisons such as 1080 are needed to control predators that are pushing small mammals and some bird and reptile species to extinction. Banning the use of 1080 though certification under the FSC would be disastrous to many threatened species."

The use of 1080 in Western Australia, where it is a naturally occurring substance, is more acceptable for some stakeholders who recognise the reduced impact of 1080 on non-target species in Western Australia, and its contribution to broader public pest control programs:

"1080 is found naturally in WA native plants. Its use on pest species such as foxes, cats and dogs is well controlled and very effective. It is used by National Park Managers why would we not, under controlled conditions use it on our plantation lands."

"In the South-West of Western Australia foxes (and feral cats) have a high negative impact on native fauna - both through predation, and competition, as well as on the agricultural sector through the loss of livestock (namely sheep). The impact of 1080 ingestion by native animals within this region is negligible, and extremely unlikely to result in mortality, making it an appropriate poison in the control of introduced pests."

"The use of 1080 baits by the plantation companies also make the companies "good neighbours" as they are supporting the community wide baiting program and increasing the overall effectiveness."

Stakeholders indicated their preference for alternative browsing control methods, despite the associated increased cost:

"There are also alternative methods of controlling browsing animals (such as fencing, tree guards etc.) which would preclude the use of 1080 poison but forest managers will attempt to use the easiest and cheapest option available."

Overall the high toxicity of 1080 to non-target species, including native fauna, concerned many stakeholders, including those not in those jurisdictions seeking to use the highly hazardous pesticide. The public benefit of 1080 in controlling predatory pest animal species was well recognised, particularly in Western Australia where many non-target native species are resistant to 1080 poisoning.

Table 5 and Figure 5 compares the acceptance of 1080 for use on FSC certified lands for Victoria and Western Australia (the low number of respondents for South Australia, New South Wales and Queensland preclude its inclusion here with only 4 respondents across these states). As Tasmania is not seeking a derogation for 1080 it is not included here, however those stakeholders who commented on the 1080 application are included in the analysis presented above.

As can be seen in

Table **5** and Figure 5, 1080 is highly accepted for use on FSC certified lands in Western Australia, with 83% of survey respondents agreeing to its use, and 100% agreeing that 1080 is needed to control pest animal species. In Victoria this level of acceptance is substantially lower, with only 36% of respondents agreeing that forest managers should be permitted to use 1080 on FSC certified forests, and 59% disagreeing. However, 68% of survey respondents commenting on Victorian derogations thought that control measures used in the application of 1080 were sufficient, with only 9% disagreeing that control measures were sufficient.

Table 5: A comparison of acceptance for use of 1080 across Victoria and Western Australia

	Agree	Neutral	Disagree	Don't Know
1080 is presently needed for effective pest animal management and control - VIC (n=22)	36%	5%	55%	5%
1080 is presently needed for effective pest animal management and control - WA (n=6)	100%	0%	0%	0%
The control measures used when using 1080 are sufficient for managing its potential negative impacts - VIC (n=22)	68%	18%	9%	5%
The control measures used when using 1080 are sufficient for managing its potential negative impacts - WA (n=6)	83%	17%	0%	0%
The processes for finding and/or developing alternatives to 1080 are appropriate - VIC (n=22)	27%	14%	41%	18%
The processes for finding and/or developing alternatives to 1080 are appropriate - WA (n=6)	67%	17%	0%	17%
The forest managers should be permitted to use 1080 on FSC certified forests subject to abiding by the conditions of the derogation - VIC (n=22)	36%	5%	59%	0%
The forest managers should be permitted to use 1080 on FSC certified forests subject to abiding by the conditions of the derogation - WA (n=6)	83%	17%	0%	0%

Figure 5: Acceptance of 1080 within Victorian and Western Australian FSC certified forests