

Application Form for a Temporary Derogation to Use an FSC 'Highly Hazardous' Pesticide

<b>A. General Requirements</b>		
<b>Application Submission date:</b>		
<b>Name, and contact details of certification body requesting a temporary derogation:</b>	Scientific Certification Systems 2000 Powell St., Suite 600   Emeryville, CA 94608 USA tel: 510.452.8049   fax: (510) 452 6882 <a href="mailto:bgrady@scscertified.com">bgrady@scscertified.com</a> <a href="http://www.SCScertified.com">www.SCScertified.com</a>	
<b>Active ingredient for which a derogation is being requested:</b>	Alpha-cypermethrin	
<b>Trade name and formulation type of the pesticide:</b>	Various including the following (copies of MSDS's supplied) CROP CARE -DOMINIX DUO FARMOZ – ALPHA-SCUD ELITE NUFARM – ASTOUND DUO NUFARM – FASTAC DUO	
NUFARM – ASTOUND DUO NUFARM – FASTAC DUO	CROP CARE - DOMINIX DUO	FARMOZ – ALPHA-SCUD ELITE
<b>Manufacturer</b> Nufarm Australia Limited 103-105 Pipe Road Laverton North Victoria 3026 Australia Tel: (03) 9282 1000 Fax: (03) 9282 1001  <b>Access Date:</b> 10/04/2012	<b>Manufacturer</b> Crop Care Australasia Pty Ltd, 77 Tingira Street, Pinkenba Queensland 4008 Australia  <b>Access Date:</b> 10/04/2012	<b>Manufacturer</b> Farmoz Pty Ltd, Suite 1, Level 4, Building B 207 Pacific Highway, St Leonards, NSW 2068 Australia Tel: (02)9431 7800 (24 hours) Fax: (02)9431 7700 <b>Access Date:</b> 10/04/2012
<b>Method of application and application equipment:</b>	Ground and Aerial spray	
<b>Common and scientific name of the pest species:</b>	Coleoptera (beetles), Lepidoptera (moths and butterflies), Hymenoptera (e.g. sawflies), Orthoptera (grasshoppers and locusts), and Hemiptera (bugs)	
<b>Name and FSC certification codes of certificate holders requesting a temporary derogation:</b>	PF Olsen (Aus) Pty Ltd trading as PF Olsen Australia	
<b>Scope for which a temporary derogation is being requested:</b>	For the control of Coleoptera (beetles), Lepidoptera (moths and butterflies), Hymenoptera (e.g. sawflies), Orthoptera (grasshoppers and locusts), and Hemiptera (bugs) in young plantations of Eucalyptus in Australia. See maps attached in Appendix I for specific areas. These are areas of plantations in the following regions: <ol style="list-style-type: none"> <li>1. South West Victoria.</li> <li>2. Gippsland, Victoria.</li> <li>3. Albany Region, Western Australia.</li> <li>4. Bunbury Region, Western Australia.</li> <li>5. Kangaroo Island, South Australia.</li> <li>6. Wattle Range, South Australia.</li> <li>7. Tasmania.</li> </ol>	

**1. Demonstrated need: Explain how the proposed use complies with the criteria for need, including consideration of non highly hazardous alternatives and preventative silvicultural measures.**

Many different species of insects eat the foliage and stems of Blue Gums (*Eucalyptus globulus*). These species range from scarab beetles, wingless grasshoppers, cadmus beetles, moth larvae to sawfly larvae. Particular insect problems can be highly specific to the location and age of plantations. Some pests, such as wingless grasshoppers are only a problem with young trees, while others such as sawfly have potential to defoliate 5 – 6 year old trees.

For most species there is no selective insecticide available and consequently, a non-selective insecticide is required. Alpha-cypermethrin is the only non-selective knock down insecticide registered for the purpose of spraying insects in Blue Gum plantations.

Success (Spinetoram) is one potential alternative chemical. It is however significantly more expensive than alpha cypermethrin, only registered for use on chrysomelid larvae, and has large no spray zones (e.g. cannot be aerially sprayed within up to 800 m of any pasture or forage crop) that significantly limit its use.

DiPel (*Bacillus turingiensis*) is another alternative to alpa-cypermethrin. It is registered for forestry use against Lepidopteran caterpillars, such as Autumn Gum Moth. DiPel is significantly more expensive than alpha –cypermethrin.

Another alternative to alpha-cypermethrin in some circumstances is Shield (clothianidin). One drawback of Shield is the high cost of application as it has to be injected after planting as a separate manual operation. Research is being undertaken to test if it can be effectively applied to seedlings at the nursery, which should be significantly more cost effective. It also does not effectively control lepidopteran pests such as Autumn Gum Moth. While shield provides good protection to seedlings, this protection only lasts for 12 -24 months, and it cannot be cost effectively applied to larger trees.

Shield has become standard practice for second rotation establishment operations, which should significantly reduce the need for alpha-cypermethrin applications 12 – 24 months after establishment.

From direct experience, a number of insects can occur in sufficient numbers to completely eliminate newly planted seedling crops, particularly spring beetles and wingless grasshoppers. Where these insects occur in large numbers and are not controlled, the crop can suffer close to 100% mortality and requires complete re-establishment, from weed control to planting. This is at a cost of approximately \$1000 per hectare, plus costs associated with a year of lost growth.

There is also a wealth of literature showing that insect damage can cause substantial growth losses and volume losses to plantations, including in older plantations (Loch and Matsuki, 2010<sup>1</sup>; Collett and Neumann, 2002<sup>2</sup>; Elek, 1997<sup>3</sup>; Quentin et al.,2010<sup>4</sup>). The volume losses depend on the amount

<sup>1</sup> Loch, A. And Matsuki, M. (2010). Effects of deloiation by Eucalyptus weevil, *Gonipterus scutellatus*, and chysomelid beetles on growth of *Euclayptus globulus* in southwestern Australia. Forest Ecology and Management 260(8): 1324-1332.

<sup>2</sup> Collet, N. And Neumann, F. (2002). Effects of simulated chronic defoliation in summer on growth and survival of blue gum (*Euclayptus globulus Labill.*) within young plantations in Northern Victoria. Australian Forestry 65(2): 99-106.

<sup>3</sup> Elek, J. (1997). Assessing the impact of leaf beetles in eucalypt plantations and exploring options for their management. Tasforests 9: 139-154.

<sup>4</sup> Quentin, A., Pinkard, E., Beadle, C., Wardlaw, T., O'Grady, A., Paterson, S. And Mohammed, C. (2010). Do artificial and natural defoliation have similar effects on physiology of *Eucalyptus globulus Labill.* Seedlings? Annals of Forest Scieince 67(2): 203.

of damage done and on the frequency with which damage occurs. Experience also shows that multiple severe insect attacks can cause death in older trees.

PF Olsen controls insects on the best available thresholds of damage for economic loss and continues to work both internally and in collaboration with industry partners and research organisations to develop more accurate and precise damage thresholds.

## **2. Stakeholder consultation**

In Australia all chemical must be registered for use by the Australian Pesticides and Veterinary Medicines Authority. The registration process is explained in this document [http://www.apvma.gov.au/publications/fact\\_sheets/docs/registration\\_process.pdf](http://www.apvma.gov.au/publications/fact_sheets/docs/registration_process.pdf) and includes review by experts and public consultation. The approval process can take between 3 and 15 months.

Alpha-cypermethrin use in “young plantations of Eucalyptus in Australia” is currently on the FSC™ “List of Approved Derogations for use of ‘Highly Hazardous’ Pesticides”<sup>5</sup>. In order to obtain this status extensive stakeholder input was requested and considered. This temporary derogation is current until 1st February 2016.

PF Olsen Australia has a Stakeholder Engagement and Communication Policy<sup>6</sup>. A direct result of this means PF Olsen Australia will consult with neighbours prior to any aerial operations.

In addition to this, the preparation of:

- Our chemical use best practice guideline,
- Property Management Plans, and
- Specific Operational Plans,

ensures that relevant local regulations and stakeholder concerns are identified prior to chemical use and appropriate steps are taken to ensure compliance with these requirements.

Specific reviews of relevant pesticide legislation are described in the following papers.

Fong, N. (2005). Review of Pesticide legislation and policies in Western Australia. Department of Health, Government of Western Australia.

Stevens, M. (2007). Use of herbicides in water catchment areas. Circular No: PSC 88. Department of Health, Government of Western Australia.

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<sup>5</sup><http://ic.fsc.org/download.fsc-pesticides-policy-guidance-addendum-list-of-approved-derogations-for-use-of-highly-hazardous-pesticides.305.pdf>

<sup>6</sup><http://www.pfolsen.com/au/src/FSCPolicy.pdf>

<b>B. Forest Management Enterprise Specific Requirements</b>	
<b>Forest Management Enterprise:</b>	<b>PF Olsen (Aus) Pty Ltd trading as PF Olsen Australia</b>
<b>FSC Certificate Registration Code:</b>	
<b>Location /region:</b>	<b>Australia</b>
<b>1. Specified controls to prevent, minimize and mitigate hazards:</b>	
<p>State and federal legislation already prescribe strict controls for use. These include:</p> <ul style="list-style-type: none"> <li>• Licenced operators are used for application.</li> <li>• PPE is used to prevent operators being exposed to the pesticide.</li> <li>• Relevant buffers as required on chemical labels or relevant codes of practice are used around water ways and bodies.</li> </ul> <p>In addition to these requirements, PF Olsen Australia has detailed chemical use policies and work prescriptions which include:</p> <ul style="list-style-type: none"> <li>• minimum competency standards for operators.</li> <li>• detailed operation plans that specify buffers and required atmospheric conditions for operations.</li> <li>• Requirements to minimise the use of alpha-cypermethrin through:</li> <li>• Use of Shield at planting as standard on second rotation sites</li> <li>• Monitoring of pest levels prior to spraying.</li> </ul> <p>Conformance to these policies and prescriptions is monitored as follows:</p> <ul style="list-style-type: none"> <li>• daily by operators.</li> <li>• at least weekly by PF Olsen Australia supervisors.</li> <li>• periodic internal audits.</li> <li>• third party audits as required by certification bodies.</li> </ul> <p>Amounts of Alpha-cypermethrin used by PF Olsen Australia will be recorded and reported annually on the PF Olsen Australia website.</p>	
<b>2. Program to identify alternatives to a 'highly hazardous' pesticide including preventative silvicultural measures. Describe the programs that are in place to identify alternatives, include a timetable and indicate research partners and targets.</b>	
<p>PF Olsen Australia is committed to finding alternatives to highly hazardous chemicals. As such we are members of a number of relevant groups to which we make significant financial contributions.</p> <p>One group we are members of is the Forest Industry Herbicide Research Consortium. The aim of this consortium is "to maintain and increase the productive capacity of the Australian plantation forestry industry by ensuring the continued availability of effective, environmentally and socially acceptable chemical control options for weeds, pests and diseases by coordinating the forestry-specific pesticide research effort. Developing and promoting industry best practice and providing considered scientific advice to the public, regulators, legislators and industry". The Consortium works closely with chemical manufactures, the APVMA and industry to identify, test and register new herbicides and insecticides for use in forestry.</p> <p>PF Olsen Australia is also a member of the Industry Pest Management Group (<a href="http://plantationhealth.com.au">http://plantationhealth.com.au</a>). This is a group of hardwood plantation owners and managers that collaborates to better manage pests within plantations. Current projects of the IPMG are:</p> <ul style="list-style-type: none"> <li>• Setting up cross-company and estate-wide monitoring and surveillance programs in WA and Green Triangle</li> </ul>	

- Developing cross-company web-based pest and pathogen databases
- Trialling the use, efficacy and effects of bio-insecticides on pests and beneficial predator species.
- Investigating the use of parasitoids for the effective bio-control of *Gonipterus scutellatus*
- Biodiversity, distribution and phenology of insect herbivores and their natural enemies in plantations.
- Identification, distribution and presence levels of the main pathogens occurring in plantations.
- Relationships between insect population levels, the levels of damage caused and productivity in plantations.
- Temporal and spatial variation in the environment and its effects on abundance of pests and diseases.
- Trialling selective chemical spraying. Reducing pest and disease levels through silvicultural management.

Previous projects of the IPMG have included sampling methods to determine pest levels and appropriate control thresholds. These procedures have been adopted into PF Olsen Australia's standard practices.

As the current managers of the ex Great Southern Plantations estate we now manage a number of trials established by Great Southern Plantations. These include trials of mid rotation Sheild application. PF Olsen Australia is currently assessing these trials, prioritising and planning the future management of these trials. Once an understanding of these trials is obtained, future trials will be planned.

**Pesticide plan to manage identified pest problem**

Timing of application	Product/ Trade names	Active ingredients	Active formulation (g/L or g/Kg)	CAS number	Form (e.g. granule, pellet, liquid, EC)	Application method (incorporation, ground application, aerial application)	Rate (L/Ha or Kg/Ha)	Cost (\$/Ha)
<b>At Planting (2R sites)</b>	Shield	Clothianidin	200g/L		Liquid	Soil injection	1.25ml/ tree	\$75/ha chemical \$75/ha application
<b>1 Year (if required)</b>	Fastac or similar	Alpha-cypermethrin	100g/L	64742-945-5	Liquid	Ground Based	250-300 ml/Ha	\$1.92-2.30/Ha chemical \$40 – 80/ Ha application
<b>5 Years (if required)</b>	Fastac or similar	Alpha-cypermethrin	100g/L	64742-945-5	Liquid	Ground Based	250-300 ml/Ha	\$1.92-2.30/Ha \$40 - \$80 application

NOTE: Alpha-cypermethrin will only be used when pests reach damaging levels. There may be multiple or no applications of alpha-cypermethrin for any particular year.

### Alternative pesticide plan to manage identified pest problem

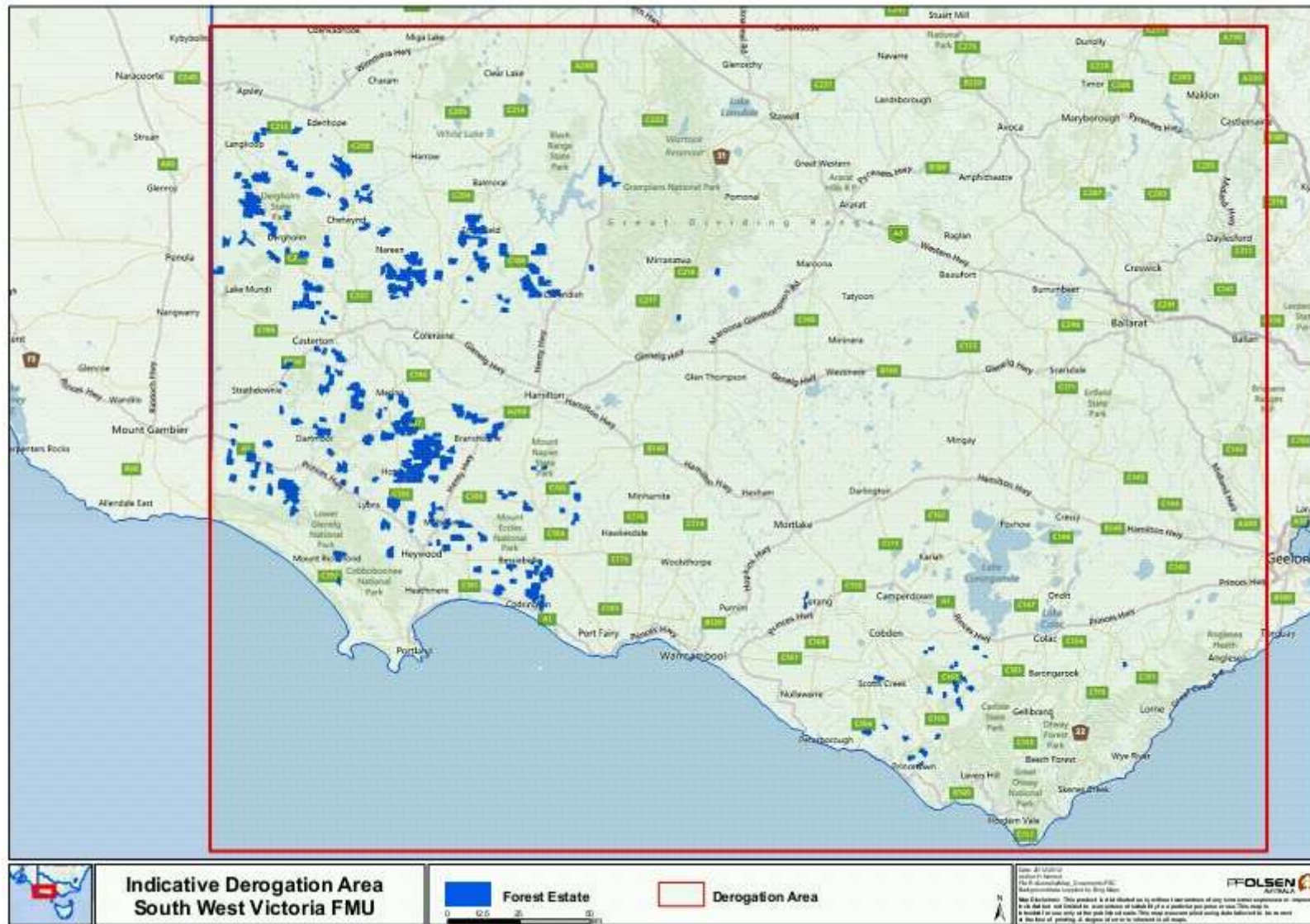
Timing of application	Product/ Trade names	Active ingredients	Active formulation (g/L or g/Kg)	CAS number	Form (e.g. granule, pellet, liquid, EC)	Application method (incorporation, ground application, aerial application)	Rate (L/Ha or Kg/Ha)	Cost (\$/Ha)
<b>At Planting</b>	Shield	Clothianidin	200g/L	210880- 92- 5	Liquid	Soil injection	1.25ml/ tree	\$75/ha chemical  \$75/ha application
<b>1 Year (if required)</b>	Success™ Neo Insecticide	Spinetoram	120 g/L	187166-40- 01 and 187166-15-0	Liquid	Ground based or aerial spraying	25-50 mL/ha	N/A
	Dipel DF Biological Insecticide	Bacillus Thuringiensis Subsp Kurstaki Strain Hd-1	54 g/Kg	68038-71 - 1	Powder	Ground based	0.5-2.0 kg/ha	N/A
<b>5 Years (if required)</b>	Success™ Neo Insecticide	Spinetoram	120 g/L	187166-40- 01 and 187166-15-0	Liquid	Ground based or aerial spraying	25-50 mL/ha	N/A
	Dipel DF Biological Insecticide	Bacillus Thuringiensis Subsp Kurstaki Strain Hd-1	54 g/Kg	68038-71 - 1	Powder	Ground based	0.5-2.0 kg/ha	N/A

**Note:** The alternative chemicals are only registered for use and effective against a very narrow spectrum of pests. If the pests are not listed on the label of Success or Dipel there is no alternative to control insects that is both registered and not on the highly hazardous list. Not controlling pests can lead to total failure of the plantation. This results in a severe economic loss, plus necessitates the use of additional chemicals during re-establishment.

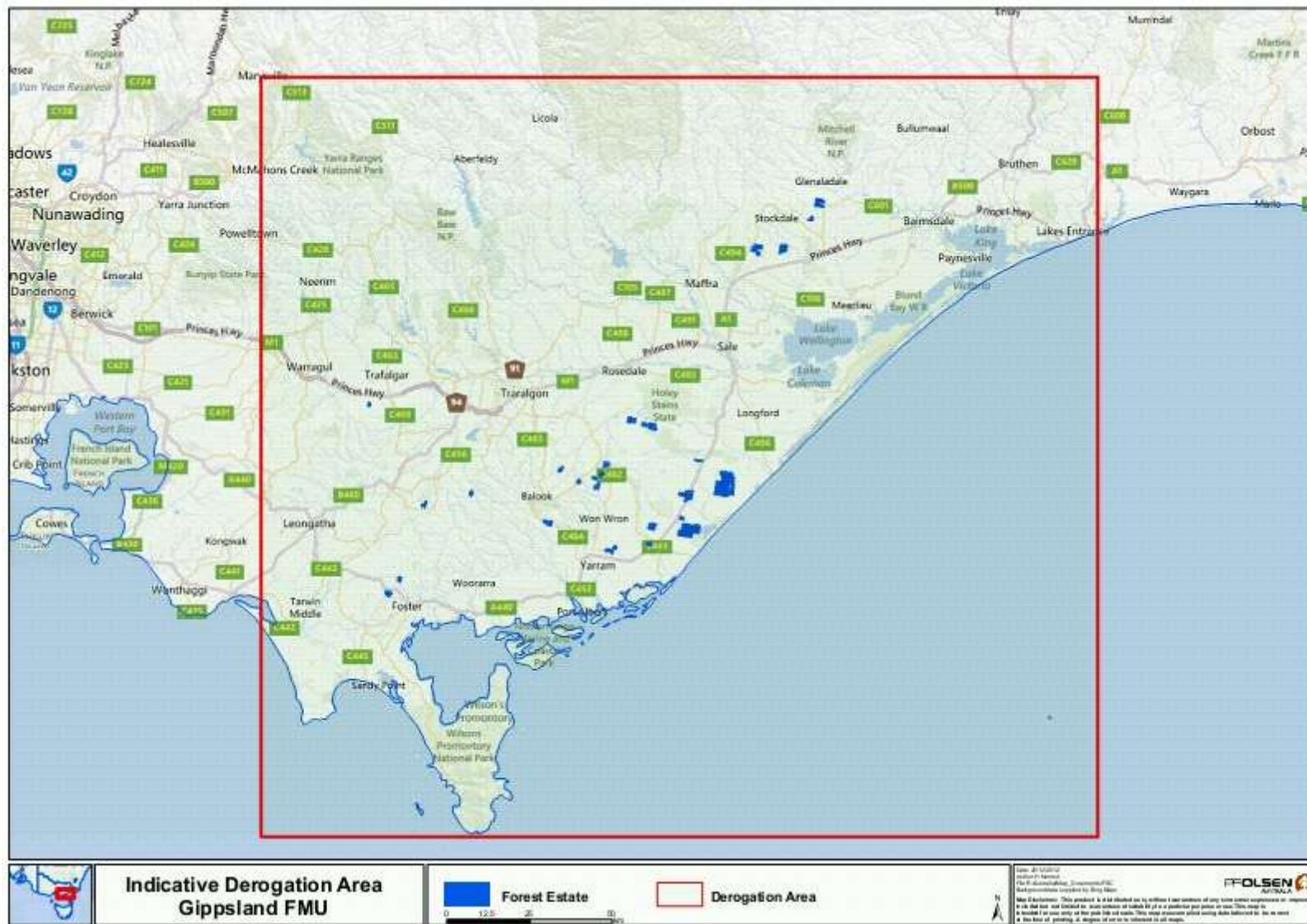
**APPENDIX I – Indicative Maps of PF Olsen Australia FMU's**



1. South West Victoria.

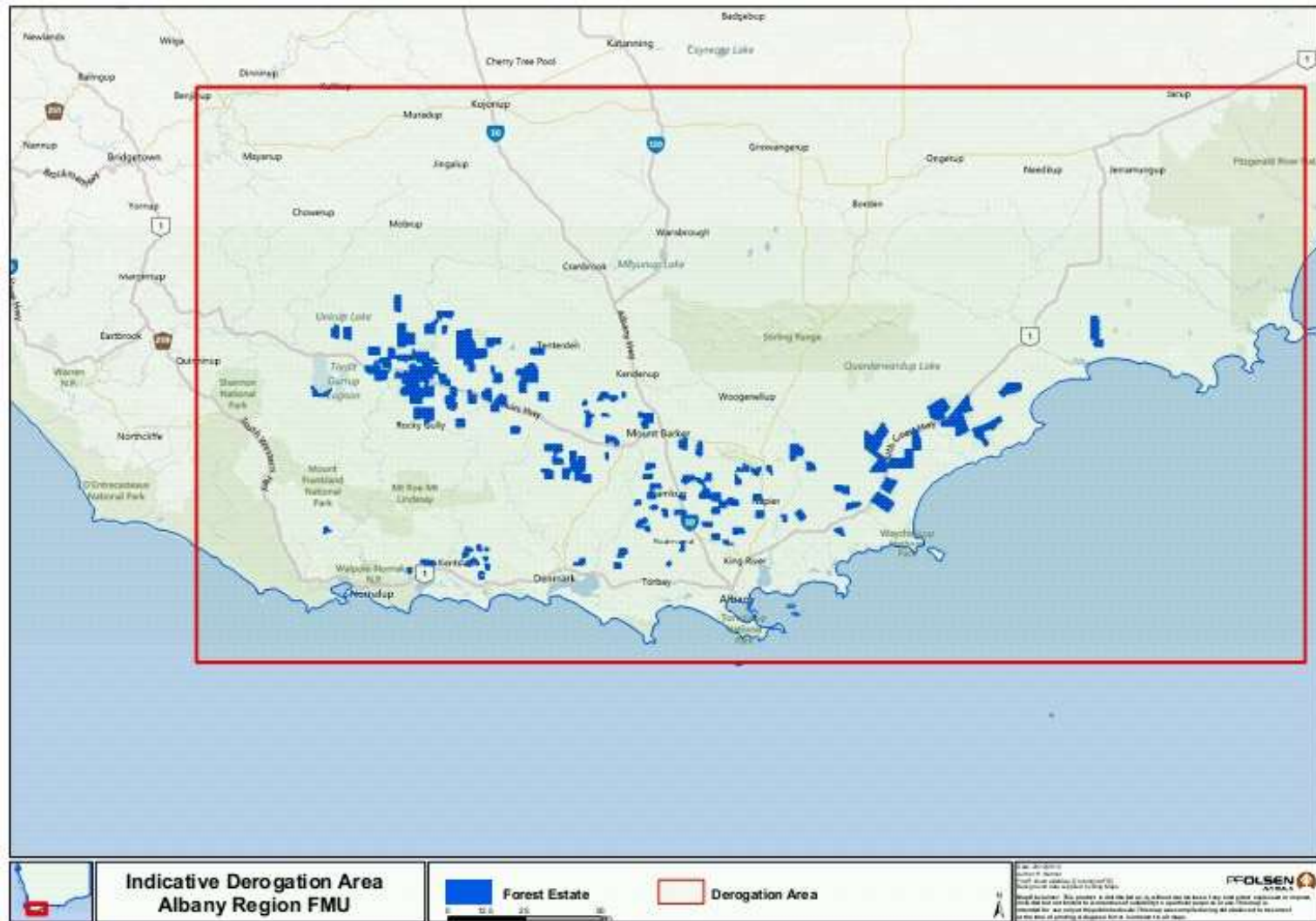


## 2. Gippsland, Victoria.

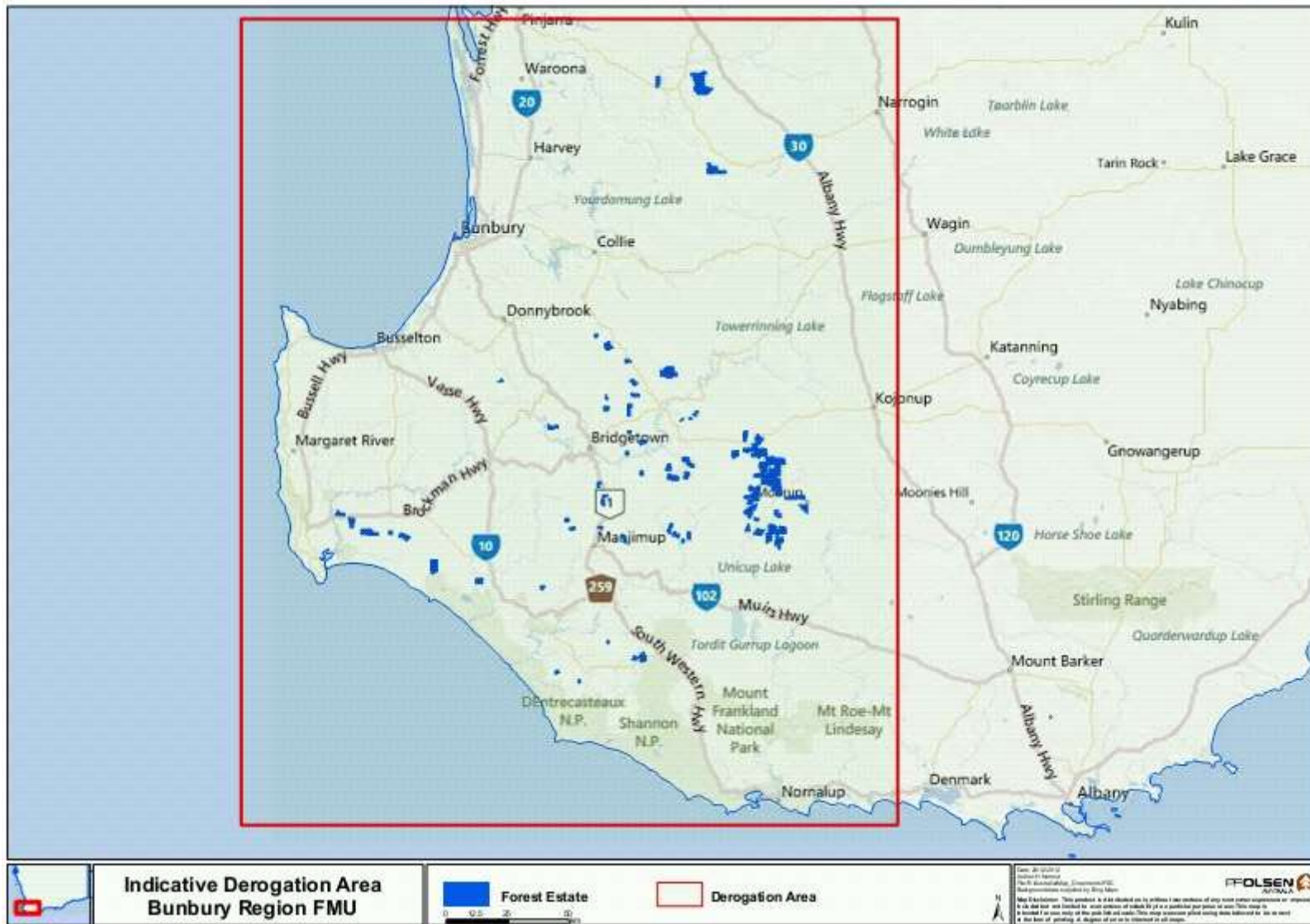




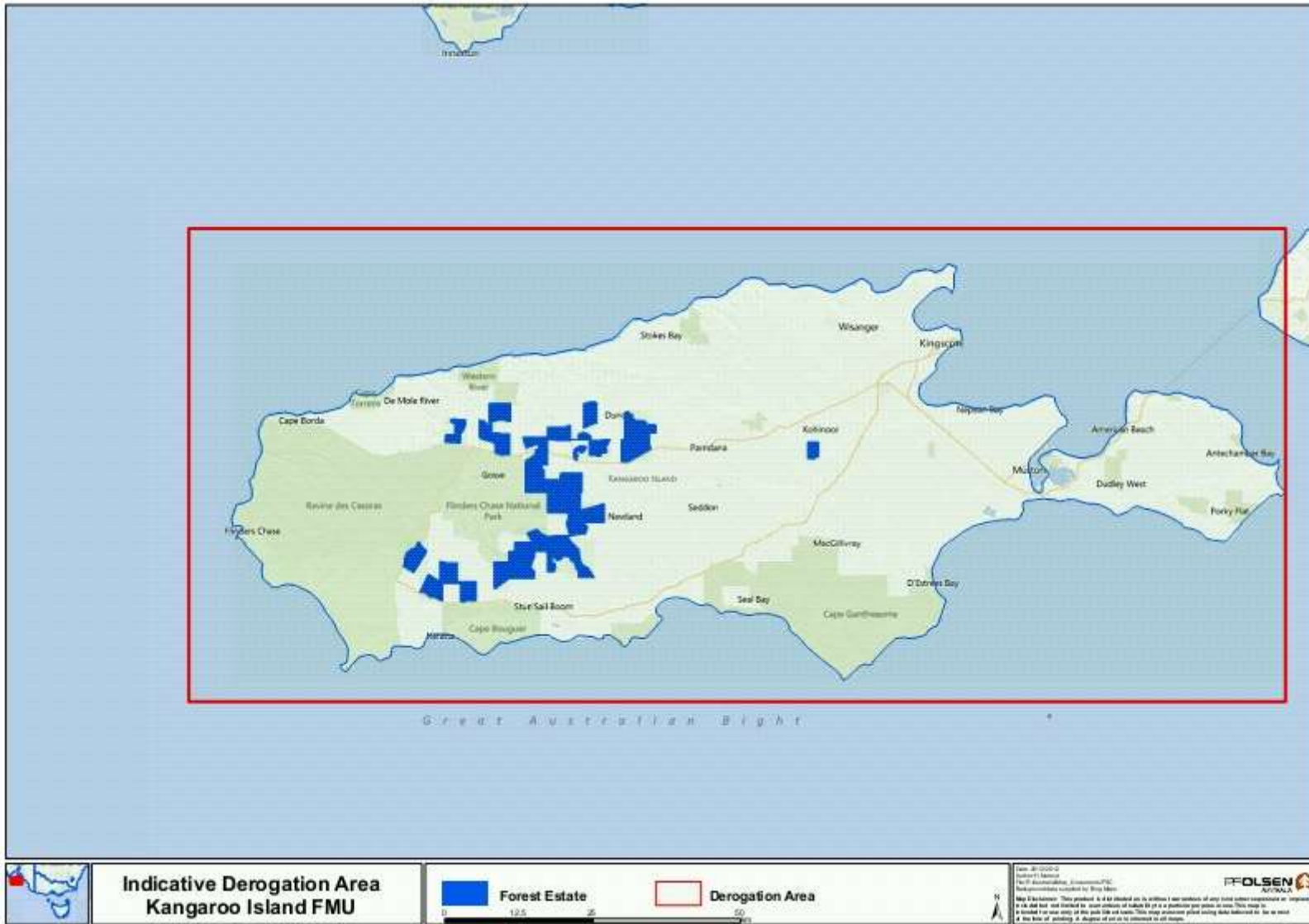
### 3. Albany Region, Western Australia.



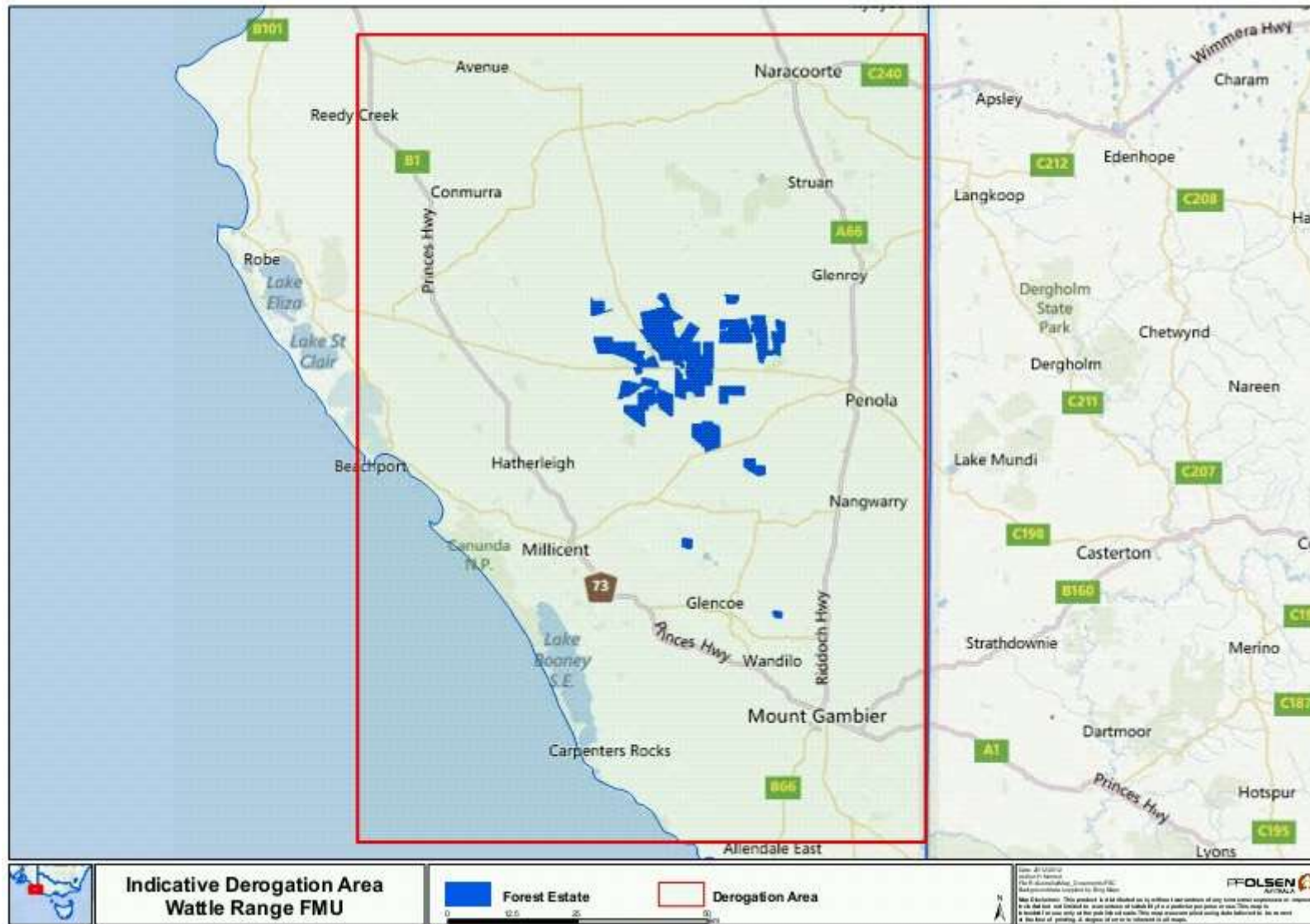
4. Bunbury Region, Western Australia.



5. Kangaroo Island, South Australia.



6. Wattle Range, South Australia.





## 7. Tasmania.

