Department of Biodiversity, Conservation and Attractions
GOVERNMENT OF WESTERN AUSTRALIA

Nomination *(to be completed by nominator)*

Current conservation status	
Name of ecological community:	Mt Lindesay – Little Lindesay Vegetation Complex
Other names:	
Description:	Mt Lindesay – Little Lindesay Vegetation Complex Updated description (February 2018). The community is known from two occurrences; Mount Lindesay and Little Lindesay. It comprises a unique combination of restricted flora including granite specialists. The granite complex also contains threatened flora and priority flora taxa. *Eucalyptus marginata* (jarrah), shrub-mallee and heath predominates the upper slopes and summit area with *Eucalyptus marginata*, *Corymbia calophylla* (marri) and *Eucalyptus megacarpa* (bullich) low woodland in gullies. Soils are shallow or skeletal. In these areas typical shrubs include *Banksia grandis* (bull banksia), *Hakea varia* (variable-leaved hakea) and *Beaufortia decussata* (gravel bottlebrush) with sedges *Mesomelaena graciliceps* and *Netrostylis capillaris*. Other shrubs include *Sphenotoma parviflora*, *Gastrolobium brownii* and *Billardiera drummondii*. Three priority taxa of Andersonias — *Andersonia hammersleyana* (priority 2), *Andersonia* sp. Mitchell River (B.G. Hammersley 925) (priority 3) and *Andersonia* sp. Virolens (G.J. Keighery 12000) (priority 3) are found in the community. Relatively bare granite rock slabs dominate the middle slopes and support a unique community of scrub and open herbs including two species listed as threatened (*Grevillea fuscolutea* and *Laxmannia grandiflora* subsp. *brendae*) and four priority flora (*Borya longiscapa* (priority 3), *Cryptandra congesta* (priority 4), *Lasiopetalum* sp. Denmark (B.G. Hammersley 2012) (priority 3), and *Sphenotoma* sp. Stirling Range (P.G. Wilson 4235) (priority 4)). Additional non-endemic flora include *Drakaea micrantha* (threatened) and *Eucalyptus virginea* (Mount Lindesay white gum) (priority 4) with granite associates *Calothamnus scabridus* (priority 2) and *Verticordia endlicheriana* var. *angustifolia* (priority 3). The community was identified through regional survey of mountains by Barrett (1996). See figures 1, 2, 4 below.
Nomination for:	Listing ☐ Change of status ☒ Delisting ☐

1. Is the ecological community currently on any conservation list, either in a State or Territory, Australia or Internationally? *2. Is it present in an Australian jurisdiction, but not listed?*	*Provide details of the occurrence and listing status for each jurisdiction in the following table*

Jurisdiction	**List or Act name**	**Date listed or assessed (or N/A)**	**Listing category eg. critically endangered (or none)**	**Listing criteria eg. B1ab(iii)+2ab(iii) (or none)**
National	EPBC Act			

Western Australia	TEC list: WA Minister ESA list in policy	6/11/2001	Endangered	
	Priority list		1 ☐ 2 ☐ 3 ☐ 4 ☐	
Other State/Territory				

Nominated conservation status: category and criteria (include recommended status for deleted ecological communities)

Critically endangered (CR) ☒ Endangered (EN) ☐ Vulnerable (VU) ☐ Collapsed (CO) ☐

Priority 1 ☐ Priority 2 ☐ Priority 3 ☐ Priority 4 ☐ None ☐

What criteria support the conservation status category for listing as a threatened ecological community or collapsed ecological community? *Refer to Section 32 of the Biodiversity Act 2016 for definition of 'Collapsed', and Appendix 3 table 'IUCN Red List Criteria for ecosystems version 2.2'.*		Meets criteria for Critically Endangered B1a,b,c; B2a,b,c
Eligibility against the criteria		
*Provide justification for the nominated conservation status; is the ecological community eligible or ineligible for listing against the five criteria. For **delisting**, provide details for why the ecological community no longer meets the requirements of the current conservation status.*		
A.	Reduction in geographic distribution *(evidence of decline)*	☐ **A1** ☐ **A2a** ☐ **A2b** ☐ **A3**
	Justification of assessment under Criterion A.	• For criteria A and B, the ecosystem was assumed to collapse when the mapped distribution declines to zero. • The community occupies its former geographic range (see Figure 6). • There is no evidence to support an inference that a minimum 30% reduction in geographic distribution has or will occur over any 50-year period, or a 50% reduction since ~1750 (ie. the minimum thresholds to meet the category VU under criterion A). • **Does not meet criterion A**
B.	Restricted geographic distribution *(EOO and AOO, number of locations and evidence of decline)*	☒ **B1** (specify at least one of the following): ☐ **a)(i)** ☐ **a)(ii)** ☒ **a)(iii)** ☒ **b)** ☒ **c);** ☒ **B2** (specify at least one of the following): ☐ **a)(i)** ☐ **a)(ii)** ☒ **a)(iii)** ☒ **b)** ☒ **c);** ☒ **B3 (only for Vulnerable Listing)**

	Justification of assessment under Criterion B.	• B1: EOO is 26.16 km^2 (<2,000km^2 - the threshold for CR). • B2: AOO is 100km^2 (occupies one 10x10 km^2 grid cells - the threshold for CR) (overlays two grid cells, but can fit within one grid cell, as advised in the IUCN RLE Guidelines) a): Data are available to indicate decline in a measure of disruption to biotic interactions as 64.3% of the extent of the ecological community is mapped as infested with dieback disease caused by *Phytophthora cinnamomi* (see criterion C, and Appendix 1 below for further details). **Meets CR B1aiii, B2aiii.** b): Continuing decline from dieback disease caused by *Phytophthora cinnamomi* has been both mapped and observed (see Figure 3, 5 below). Figure 3 below shows the proportion of the community mapped as dieback infected. The lack of phosphite spraying since 2009 will likely result in continued spread and intensification of impacts of *Phytophthora cinnamomi*. The combination of fire and impacts of dieback disease are likely to continue to cause continuing declines in biotic interactions, and environmental quality over the next 20 years (see Appendix 1 and explanation under C and D below). **Meets CR B1b, B2b.** c) Considered to occur at 1 threat defined location as the 2 occurrences are only ~500m apart and likely subject to the similar major threats from dieback disease and fire and interactions of the two threatening processes. B3: Known from one threat-defined location based on areas subject to similar fire regime, and impacts of dieback disease. Prone to impacts of fire, dieback and other activities such as spread and amplification of dieback disease through human activities including use of quad bikes that cause damage to vegetation and assist in the spread of dieback, within very short time period in an uncertain future and thus capable of collapse or becoming CR within a very short time period (meets VU as <5 threat defined locations). • **Meets criteria for Critically Endangered B1a, B1b, B1c, B2a, B2b, B2c. Meets Vulnerable under Criterion B3.**
C.	Environmental degradation of abiotic variable *(Evidence of decline over 50-year period)*	☐ **C1** ☐ **C2** ☐ **C3**
	Justification of assessment under Criterion C.	• C1, C2: The impacts of fire on the community is a significant abiotic variable affecting the community. • Collapse of the community in this context is considered to be total loss of fire sensitive species from the community as a consequence of fire.

		• No systematic monitoring data that link fire regimes to composition of the community. • There are inadequate data available to determine if the community meets the minimum proportion of the extent (≥30%) or proportional severity of the impacts of fire on flora composition to determine if the community meets threshold of extent (≥30% of the extent of the community) affected by threshold levels of severity (loss of ≥30% of fire susceptible flora) over any 50-year period to meet VU under criteria C1, C2. • C3: Inadequate data are available to indicate if impacts of fire has affected flora composition to determine if the community meets threshold of extent (≥50% loss of fire susceptible flora) or proportional severity of disruption of abiotic processes (≥50%) since 1750 to meet VU.
D.	Disruption of biotic processes or interactions *(Evidence of decline over 50-year period)*	☐ **D1** ☐ **D2** ☐ **D3**
	Justification of assessment under Criterion D.	• D1, D2: The most significant biotic variable affecting the community is considered to be effects of *Phytophthora cinnamomi* dieback. • Collapse in this context is complete loss of dieback susceptible species in the community. • Inadequate data are available to indicate if the community meets the minimum thresholds for vulnerable under criterion D1 or D2. • 64.3% of the extent of the community is mapped as dieback infected. • Monitoring data to link the occurrence of dieback with the quantifiable loss of dieback susceptible species in the community are required. This will determine the relative severity of impacts of the disease on the community. • Available monitoring data are inadequate to quantify impacts of dieback disease on flora composition. These data are required to determine if the community meets minimum threshold of proportional severity of disruption of abiotic processes (≥90% over ≥50% of the extent) since ~1750 to meet VU. • Inadequate evidence available to indicate if the community meets the thresholds for minimum proportion of severity of degradation since 1750 to meet VU under D3.
E.	Quantitative analysis *(statistical probability of ecosystem collapse)*	• No quantitative estimates of the risk of ecosystem collapse. • **Not assessed**
Reasons for change of status		
Genuine change ☐ New knowledge ☐ Previous mistake ☐ Review/Other ☒		

Provide details: The community was initially ranked as Endangered using ranking criteria developed in WA that do not match those in the IUCN Red List Criteria for Ecosystems (version 2.2).

Summary of assessment information *(provide detailed information in the relevant sections of the nomination form)*			
EOO	26.16 km^2	AOO	1 x 100 km^2 (1 x10x10km grid method).

No. locations	2	Severely fragmented	Yes ☐ No ☒ Unknown ☐
Current known area			1437.92 ha
Pre-industrialisation extent or its former known extent (if known)			1437.92 ha
Estimated percentage decline			No evidence of decline

Summary assessment against IUCN RLE Criteria

Criterion	Rank indicated	Overall conclusion
A1	-	• Does not meet
A2a	-	• Does not meet
A2b	-	• Does not meet
A3	-	• Does not meet
B1a	CR	• EOO is ≤2,000km^2 • 64% of the extent of the community subject to disease mapping is infected with dieback disease caused by *Phytophthora cinnamomi* (VU) • Meets criterion CR B1aiii
B1b	CR	• EOO is ≤2,000km^2 • Observed and inferred continuing decline from effects of *Phytophthora cinnamomi* and fire • Meets criterion for CR
B1c	CR	• EOO is ≤2,000km^2 • Ecosystem exists at one threat-defined location • Meets criterion for CR
B2a	CR	• AOO is one grid cell • Data indicate that 64% of the extent of the community subject to disease mapping is infected with dieback disease caused by *Phytophthora cinnamomi*. • Meets CR B2aiii
B2b	CR	• AOO is one grid cell • Observed and inferred continuing decline over the next 20 years from effects of *Phytophthora cinnamomi* dieback and interactions of disease and fire • Meets criterion for CR
B2c	CR	• AOO is one grid cell • Ecosystem exists at one threat-defined location based on proximity of occurrences and threats from dieback and fire • Meets criterion for CR
B3	VU	• Known from one threat-defined location • Prone to the effects resulting from combination of effects of dieback disease, fire, inappropriate recreational activities, feral pigs and drying climate. • Meets criterion for VU
C1	-	• Inadequate evidence available to indicate if the community meets the minimum thresholds for proportion of the extent (≥30%) or

		proportional severity of degradation (≥30%) over past 50 years to meet VU.
C2	-	• Inadequate evidence available to indicate if the community meets the minimum thresholds for proportion of the extent (≥30%) or proportional severity of degradation (≥30%) over any 50-year period to meet VU.
C3	-	• Inadequate evidence available to indicate if the community meets the minimum thresholds for proportion of the extent (≥50%) or proportional severity of disruption of abiotic processes (≥50%) since ~1750 to meet VU.
D1	-	• Inadequate evidence to indicate if the community meets the minimum thresholds for proportion of the extent (≥30%) or proportional severity of degradation (≥30%) over any 50-year period to meet VU.
D2	-	• Inadequate evidence to indicate if the community meets the minimum thresholds for proportion of the extent (≥30%) or proportional severity of degradation (≥30%) over any 50-year period to meet VU.
D3	-	• Inadequate evidence exists to indicate if the community meets minimum threshold of proportional severity of disruption of abiotic processes (≥90% over ≥50% of the extent) since ~1750 to meet VU.
E	NA	• No quantitative estimates of the risk of ecosystem collapse.
		Meets CR under B1a,b,c; B2a,b,c. Meets VU under B3. '*The highest risk category obtained by any of the assessed criteria will be the overall risk status of the ecosystem'* (IUCN RLE Guidelines V1.1 page 42). **Meets CR under B1a,b,c; B2a,b,c.**

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Summary of location (occurrence) information *(provide detailed information in the relevant sections of the nomination form)*						
Occurrence	Land tenure	Survey information: date of survey	Condition	Area of occurrence (ha)	Threats *(note if past, present or future)*	Specific management actions
ML207	The majority (>99%) is within Crown Reserve in Mount Lindesay National Park, and a small proportion (0.038km²) is on freehold land.	1996: survey of composition and threats. 40 transects were monitored in September 2008), including 13 that had previously been established. The range of transects were located to encompass post burn effects, and to have some in dieback free locations.	Very Good* 100%	1360 ha	Disease – invasion and spread. Widespread plant deaths due to *Phytophthora cinnamomi* disease, and likely *Armillaria* sp. (past, current, future) Fire – too frequent/too intense (past, current and future) Combined effects of dieback disease an fire Feral pigs and hunting (and re-release) (current and future) Damage to vegetation and dieback spread from inappropriate recreational uses (past, current and future Firewood collection prevalent, resulting in trampling – direct removal of vegetation,	Disease control strategy to be developed and/or implemented (hygiene measures in place, including 'phyto fighter', a grate and cleaning station) Aerial phosphite spraying required to re-commence in protectable dieback free areas. Pig monitoring and contol Placement of physical barriers – gates, boulders and surveillance to help prevent access and damage. Monitoring of effects of dieback, and specific fire

					further spread of dieback (past, current, future)	regimes on composition of community
ML208-1	This occurrence occurs within Crown Reserve, in Mount Lindesay National Park.	Barrett S. (1996). Survey of composition and threats	Very Good* 100%	77.9 ha current area	Disease – invasion and spread. Widespread plant deaths due to *Phytophthora cinnamomi* disease, and likely *Armillaria* sp. (past, current, future) Fire – too frequent/intense (past, current and future) Combined effects of dieback disease and fire Feral pigs (current and future). Damage to vegetation and dieback spread from inappropriate recreational uses (past, current and future Firewood collection prevalent, resulting in trampling – direct removal of vegetation, further spread of dieback (past, current, future).	Disease control strategy to be developed and/or implemented (hygiene measures in place, including 'phyto fighter', a grate and cleaning station) Aerial phosphite spraying required to re-commence in protectable dieback free areas. Monitoring of effects of dieback, and specific fire regimes on composition of community

*For the purposes of relating condition to IUCN Criteria, medium condition relates to WA condition categories 'Very Good to Good^', and contains medium plant species diversity, reduced of vegetation structure, and a medium level of weed/introduced species cover.

^This includes vegetation categorised as 'Good' - Vegetation structure altered but retains basic vegetation structure or ability to regenerate it, obvious signs of disturbance are present, from activities including grazing, trampling, inappropriate fire regimes, partial clearing, hydrological changes are present, and very aggressive weeds are present, with low native plant diversity (5 – 50%) (categories from (Keighery (1994) Vegetation Condition Scale (Government of WA 2000)).

References

Barrett, S. (1996). Biological survey of mountains of southern Western Australia. Unpublished report by the Department of Conservation and Land Management for the Australian Nature Conservation Agency.

Clarke, V. (2009). Monitoring the impacts of fire and Phytophthora within the shallow soil plant communities of the Mt Lindesay Threatened Ecological Community, Denmark WA. Version 1.0. (June 2009). Prepared for Significant Native Species and Ecological Communities – Resource Condition Monitoring Project – Department of Environment and Conservation, Western Australia https://www.dpaw.wa.gov.au/images/documents/plants-animals/monitoring/20090818_mt_lindesay_system_protocol_v1.0.pdf

CSIRO and Bureau of Meteorology (2015) Climate Change in Australia Information for Australia's Natural Resource Management Regions: Technical Report, CSIRO and Bureau of Meteorology, Australia.

Moore, N., Barrett, S., Howard, K., Craig, M.D., Bowen, B., Shearer, B. and Hardy, G. 2015). Time since fire and average fire interval are the best predictors of *Phytophthora cinnamomi* activity in heathlands of south-western Australia. Australian Journal of Botany 62 (7). 587-593.

Moore, N, Bowen, B, Barrett, S and Shearer, B.L. (2007). The role of fire on *Phytophthora* dieback caused by the pathogen *Phytophthora cinnamomi* in the Stirling Range National Park, Western Australia. Paper presented at the MEDECOS XI Conference on Mediterranean Ecosystems September 2007. Perth, Western Australia.

APPENDIX 1: Major threats

Dieback disease

The community is infected with dieback disease caused by *Phytophthora* spp (see Figure 3 below). The disease can kill susceptible flora, including many of the endemic flora that occur in the community. Dieback is a serious threat as there are high numbers of species likely to be susceptible to the disease in and surrounding the assemblage The *Phytophthora* spp. pathogens, which cause the roots to rot and result in death from drought stress, are commonly introduced and spread in infected soil, mud and gravel.

Mapping of the dieback front within the existing dieback free area of this ecological community shows that the front has expanded in mapped areas approximately 1-2 metres in other areas, in the space of only 4 years (see Figure 3). Plot data (for example Plot 1) also shows that the loss of dieback susceptible species, such as *Banksia grandis*, *Adenanthos obovatus and Podocarpus drouynianus* died between 2013 and 2016 monitoring events, and *Banksia grandis* in Plot 3 had died during that same time period. In addition, in 2013, a sample of a dead *Adenanthos obovatus* (on the eastern edge of Plot 2) was tested and had the presence of *Phytophthora cinnamomi* dieback confirmed).

Effects of disease are amplified by fire. Moore *et al*. (2007**,** 2015) note that fire in *Phytophthora* infested communities has the potential to increase both the severity and extent of disease, and impinge on the regeneration capabilities of susceptible species, particularly obligate seeder species. They also note that the latest and average fire interval were closely linked to the percentage of dead and dying susceptible species among sites. This indicates that fire in dieback infected communities has the potential to increase both the severity and extent of the disease. Moore *et al*. (2007, 2015) also found that incidence of disease was considerably higher at all recently burnt sites.

Hope (2015) noted that dieback susceptible species in the community are likely to be subject to root rot and subsequent drought stress, amplified by the effects of decreasing rainfall.

Inappropriate fire regimes

An increase in the frequency of fire can prevent species from completing growth and reproductive cycles and result in altered community structure or local extinction of species. Occasional fire may, however, be required for regeneration of the community. Fire can also influence species composition by increasing weed invasion. Moore *et al.* 2015) note that it is likely that the predicted longer drier periods will result in more frequent fires, that could exacerbate plant deaths from dieback disease when conditions are warm and wet. The likely increase in *P. cinnamomi* activity post-fire has important implications for the future of plant communities affected by infestation from *P. cinnamomi.*

Cryptandra congesta is likely to go extinct with fire intervals shorter than 5 years post burn; has been observed to have first year of flowering 5 years after burn. A decline in numbers of individuals of this species has also been observed in pre-burn cohort.

Feral animals

Feral pigs (and re-release) contribute to the loss or decline or many plant species as they contribute to habitat degradation through direct vegetation damage by their diggings. Pigs can also spread or intensify dieback disease.

Firewood collection

Firewood collection results in trampling and direct removal of vegetation. It can also further spread or intensify dieback.

Drying climate

The community is at risk from a drying climate resulting from a decline in rainfall in the south west of the state. The tolerance of particular species to changes that may occur in association with a drying climate is generally unknown.

The maturation times of the component flora in the community is likely to increase with reduced rainfall and this should be factored in to planning of burns.

According to CSIRO data, early in the century (2030) and under all emission scenarios, winter rainfall is projected to decrease by up to 15 per cent. Late in the century, intermediate emissions (RCP4.5) lead to a projected decrease in winter rainfall of up to around 30%, and under high emissions (RCP8.5) winter rainfall decline is projected to decrease by up to 45%. Changes in autumn and summer are less clear, although downscaling results suggest a continuation of the observed autumn declines (https://www.climatechangeinaustralia.gov.au/en/climate-projections/future-climate/regional-climate-change-explorer/sub-clusters/?current=SSWSW&tooltip=true&popup=true; accessed November 2019).

Appendix 2: Figures

Note: Photos taken by [redacted]

Figure 1: Mt Lindesay community

Figure 2: *Eucalyptus virginea* (Priority 4) within the Mt Lindesay community

Figure 3: Dieback infested areas of the Mt Lindesay – Little Lindesay community

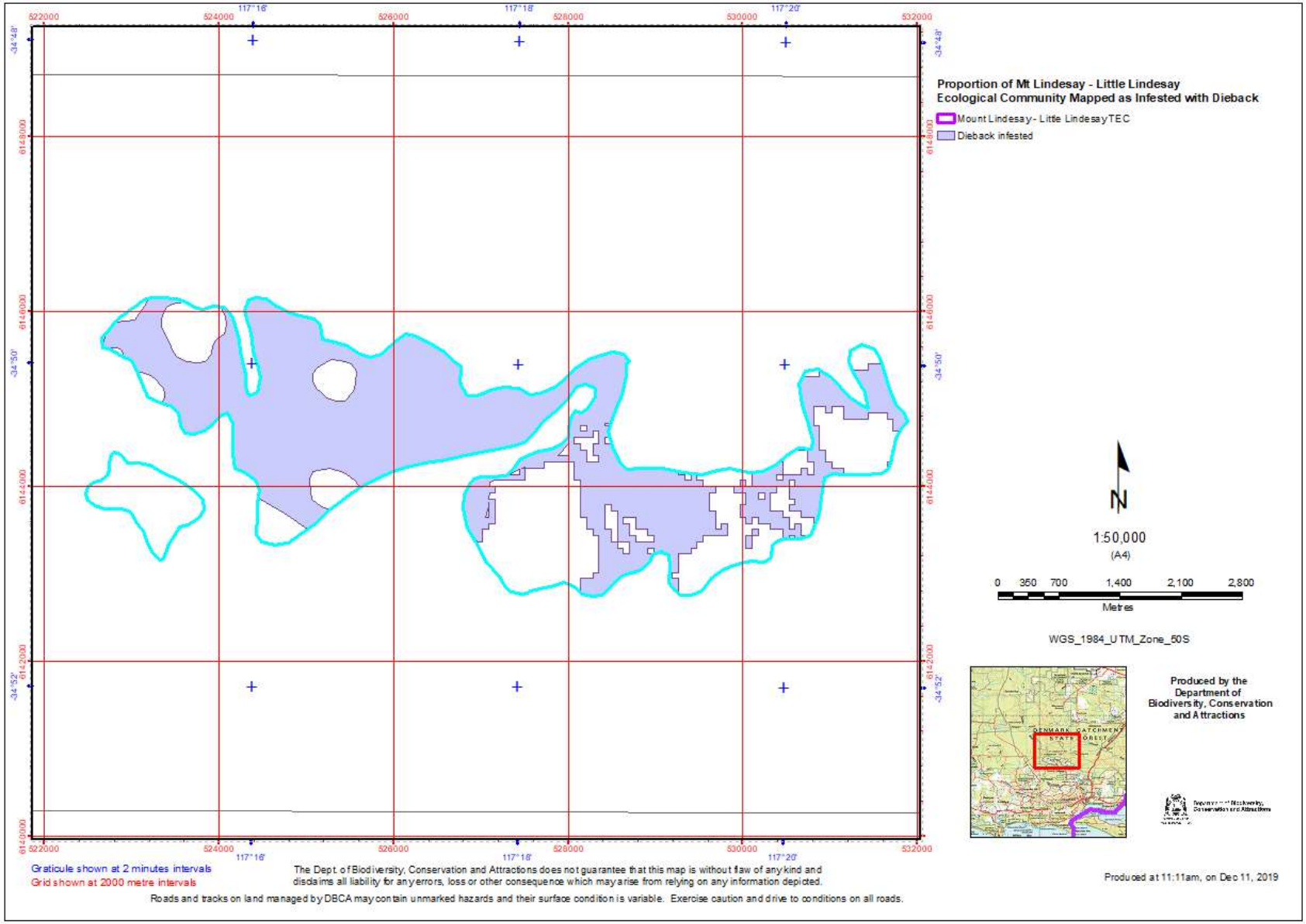

Figure 4: Locations of Threatened (Declared Rare Flora) and Priority Flora for Mt Lindesay – Little Lindesay community

Source: State NRM, Concept plan – Threatened Flora, Mt Lindesay Threatened Flora Post Fire Monitoring Project 2011

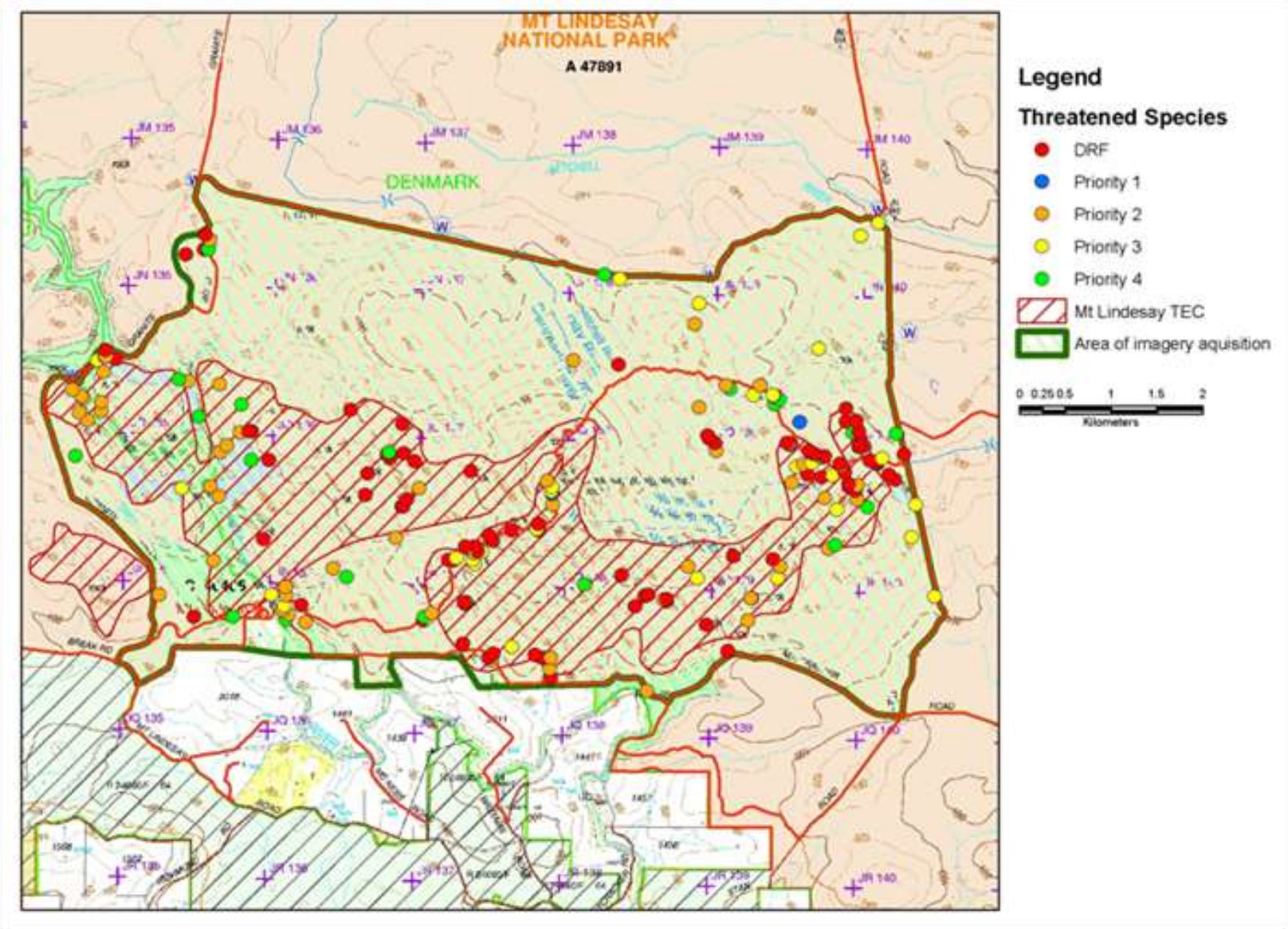

Figure 5: Spread of *Phytophthora cinnamomi* Dieback for Mt Lindesay – Little Lindesay community 2009-2013

Source: Department of Biodiversity, Conservation and Attractions, [redacted], Frankland District

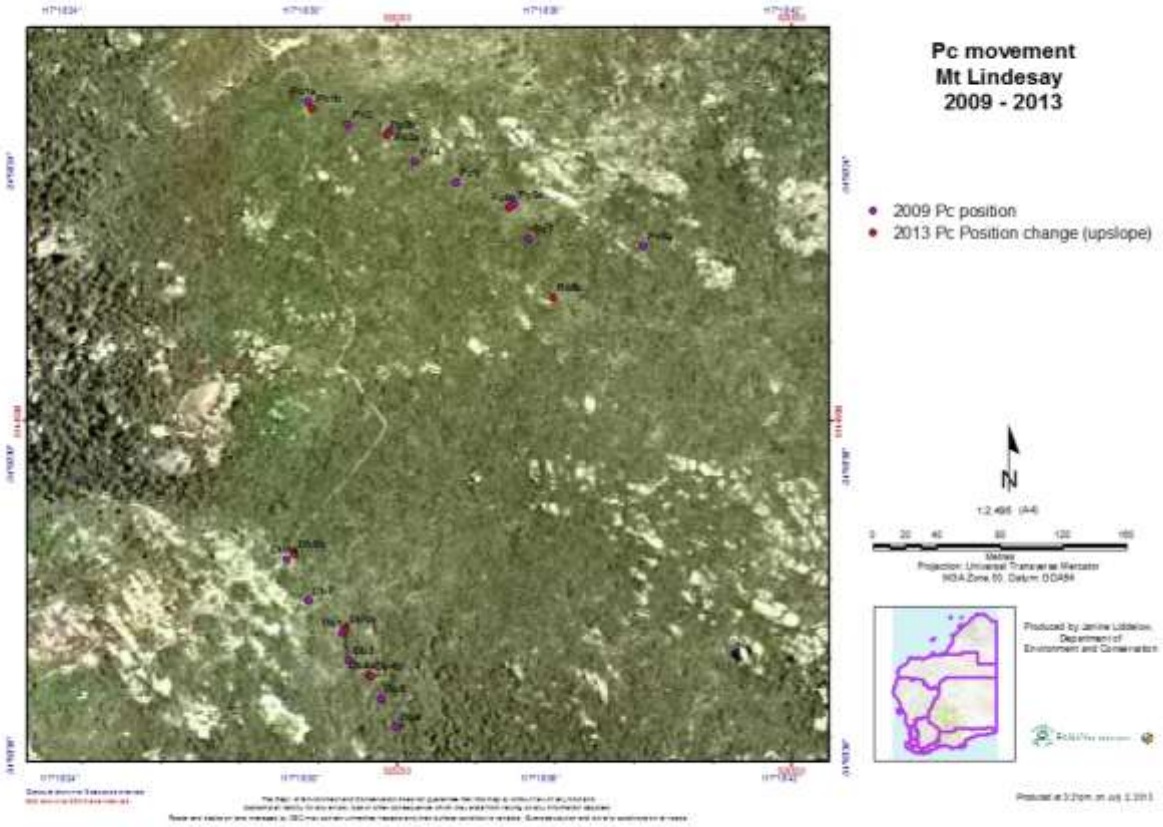

Figure 6: Mt Lindesay – Little Lindesay community boundary

APPENDIX 3 IUCN Red List Criteria for ecosystems (version 2.2) (IUCN 2017)

A. Reduction in geographic distribution over ANY of the following time periods:

		CR	EN	VU
A1	Present (over the past 50 years).	≥ 80%	≥ 50%	≥ 30%
A2a	Future (over the next 50 years).	≥ 80%	≥ 50%	≥ 30%
A2b	Future (over any 50 year period including the present and future).	≥ 80%	≥ 50%	≥ 30%
A3	Historic (since 1750).	≥ 90%	≥ 70%	≥ 50%

B. Restricted geographic distribution indicated by EITHER B1, B2 or B3:

		CR	EN	VU
B1	Extent of a minimum convex polygon enclosing all occurrences (Extent of Occurrence)	≤ 2,000 km²	≤ 20,000 km²	≤ 50,000 km²
	AND at least one of the following (a-c):			
	(a) An observed or inferred continuing decline in **EITHER**:			
	i. a measure of spatial extent appropriate to the ecosystem; **OR**			
	ii. a measure of environmental quality appropriate to characteristic biota of the ecosystem; **OR**			
	iii. a measure of disruption to biotic interactions appropriate to the characteristic biota of the ecosystem.			
	(b) Observed or inferred threatening processes that are likely to cause continuing declines in geographic distribution, environmental quality or biotic interactions within the next 20 years.			
	(c) Ecosystem exists at …	1 location	≤ 5 locations	≤ 10 locations
B2	The number of 10 × 10 km grid cells occupied (Area of Occupancy)	≤ 2	≤ 20	≤ 50
	AND at least one of a-c above (same sub-criteria as for B1).			
B3	A very small number of locations (generally fewer than 5) **AND** prone to the effects of human activities or stochastic events within a very short time period in an uncertain future, and thus capable of collapse or becoming Critically Endangered within a very short time period (B3 can only lead to a listing as VU).			VU

C. Environmental degradation over ANY of the following time periods:

C1 The past 50 years based on change in an abiotic variable affecting a fraction of the extent of the ecosystem and with relative severity, as indicated by the following table:

Extent (%)	Relative severity (%) ≥ 80	≥ 50	≥ 30
≥ 80	CR	EN	VU
≥ 50	EN	VU	
≥ 30	VU		

C2 The next 50 years, or any 50-year period including the present and future, based on change in an abiotic variable affecting a fraction of the extent of the ecosystem and with relative severity, as indicated by the following table:

	≥ 80	≥ 50	≥ 30
≥ 80	CR	EN	VU
≥ 50	EN	VU	
≥ 30	VU		

C3 Since 1750 based on change in an abiotic variable affecting a fraction of the extent of the ecosystem and with relative severity, as indicated by the following table:

	≥ 90	≥ 70	≥ 50
≥ 90	CR	EN	VU
≥ 70	EN	VU	
≥ 50	VU		

D. Disruption of biotic processes or interactions over ANY of the following time periods:

D1 The past 50 years based on change in a biotic variable affecting a fraction of the extent of the ecosystem and with relative severity, as indicated by the following table:

Extent (%)	Relative severity (%) ≥ 80	≥ 50	≥ 30
≥ 80	CR	EN	VU
≥ 50	EN	VU	
≥ 30	VU		

D2

	≥ 80	≥ 50	≥ 30

	(D2a) The next 50 years, or (D2b) any 50-year period including the present and future, based on change in a biotic variable affecting a fraction of the extent of the ecosystem and with relative severity, as indicated by the following table: OR	≥ 80	CR	EN	VU
		≥ 50	EN	VU	
		≥ 30	VU		
			≥ 90	≥ 70	≥ 50
D3	Since 1750, based on a change in a biotic variable affecting a fraction of the extent of the ecosystem and with relative severity, as indicated by the following table:	≥ 90	CR	EN	VU
		≥ 70	EN	VU	
		≥ 50	VU		
E. Quantitative analysis					
			CR	EN	VU
	… that estimates the probability of ecosystem collapse to be:		≥ 50% within 50 years	≥ 20% within 50 years	≥ 10% within 100 years