

## Abridged Threatened Species Nomination Form

For nominations under the Common Assessment Method (CAM) where supporting information is available, but not in a format suitable for demonstrating compliance with the CAM, and assessment against the IUCN Red List threat status.

### Cover Page *(Office use only)*

<b>Species name</b> (scientific and common name):	<b><i>Styphelia longissima</i></b> <b>Previously known as <i>Leucopogon</i> sp. ciliate Eneabba (F. Obbens &amp; C. Godden s.n. 3/7/2003)</b>
<b>Nomination for</b> (addition, deletion, change):	<b>Addition</b>
<b>Nominated conservation category and criteria:</b>	<b>Critically Endangered: B1ab(iii,v)+B2ab(iii,v)</b>

Scientific committee assessment of eligibility against the criteria:		
This assessment is consistent with the standards set out in Schedule 1, item 2.7 (h) and 2.8 of the Common Assessment Method Memorandum of Understanding.		Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>A.</b>	Population size reduction	•
<b>B.</b>	Geographic range	•
<b>C.</b>	Small population size and decline	•
<b>D.</b>	Very small or restricted population	•
<b>E.</b>	Quantitative analysis	•

Outcome:			
<i>Scientific committee Meeting date:</i>			
<i>Scientific committee comments:</i>			
<i>Recommendation:</i>			
<i>Ministerial approval:</i>		<i>Date of Gazettal/ Legislative effect:</i>	

## Nomination summary *(to be completed by nominator)*

Current conservation status				
Scientific name:	<i>Styphelia longissima</i> Previously known as <i>Leucopogon</i> sp. ciliate Eneabba (F. Obbens & C. Godden s.n. 3/7/2003)			
Common name:	None			
Family name:	Ericaceae	Fauna <input type="checkbox"/>	Flora <input checked="" type="checkbox"/>	
Nomination for:	Listing <input checked="" type="checkbox"/> Change of status <input type="checkbox"/> Delisting <input type="checkbox"/>			
1. Is the species 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	State / Territory in which the species occurs	Date listed or assessed (or N/A)	Listing category i.e. critically endangered or 'none'	Listing criteria i.e. B1ab(iii)+2ab(iii)
International (IUCN Red List)				
National (EPBC Act)				
State / Territory	1. WA	22/1/2008	Vulnerable	D1+D2
		2016	Vulnerable	D1
		5/4/2017	Critically Endangered	B1ab(iii,v)+B2ab(iii,v)
<b>Consistent with Schedule 1, item 2.7 (h) and 2.8 of the Common Assessment Method Memorandum of Understanding, it is confirmed that:</b>				
<ul style="list-style-type: none"> <li>this assessment meets the standard of evidence required by the Common Assessment Method to document the eligibility of the species under the IUCN criteria;</li> </ul>			Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comments:				
<ul style="list-style-type: none"> <li>surveys of the species were adequate to inform the assessment;</li> </ul>			Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comments:	Extensive surveys have been undertaken by the Department of Parks and Wildlife and environmental consultants to the mining tenement holder, Iluka Resources. No additional subpopulations have been discovered.			
<ul style="list-style-type: none"> <li>the conclusion of the assessment remains current and that any further information that may have become available since the assessment was completed supports or is consistent with the conclusion of the assessment.</li> </ul>			Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comments:	The number of mature individuals was estimated as 300-400 when the subpopulation was partially surveyed in 2003 prior to the last assessed in 2007, and reported as being reasonably healthy. Intensive survey of the existing population (individual plants GPSed) undertaken for Iluka Resources between 2003 and 2007, and reported in 2008, increased the number of mature individuals to 2188, but also made the following observations:			

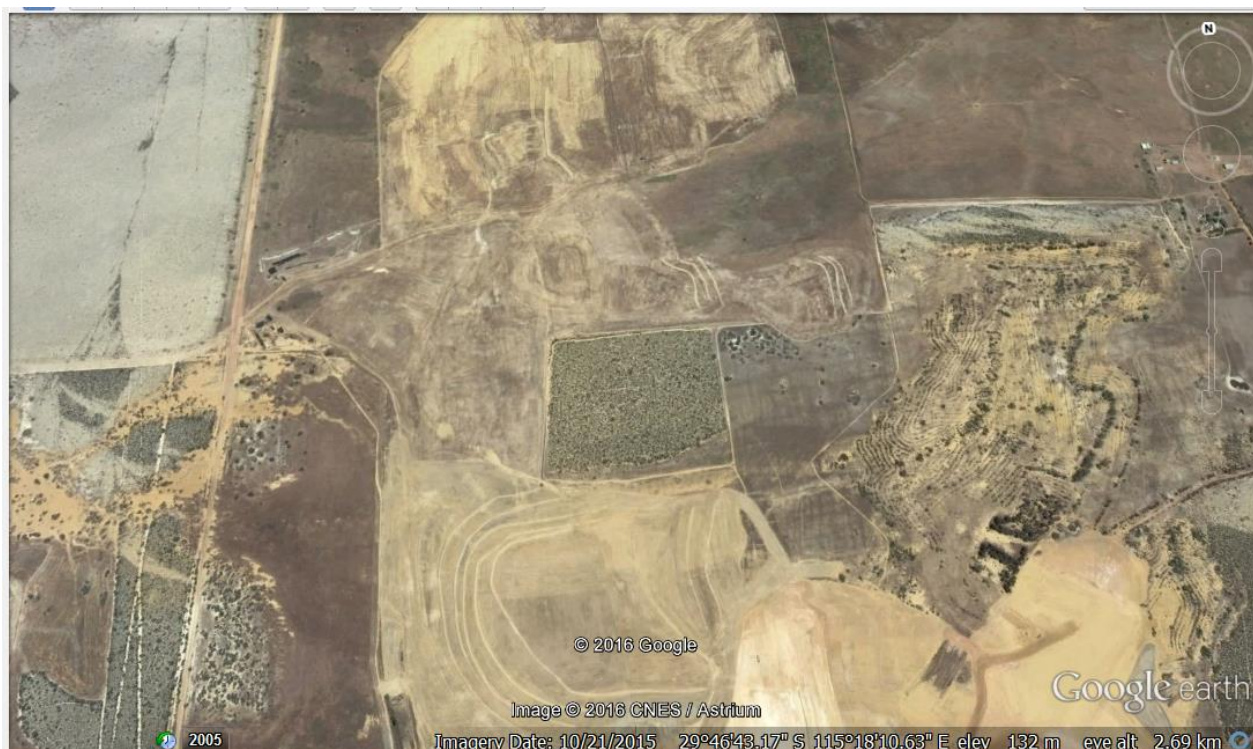
	<p>"...the relatively small percentage of the population composed of juvenile plants indicates that the population is mature and possibly senescing." and</p> <p>"The small number of juveniles coupled with the presence of dead and stressed individuals (mature and juvenile) indicates that the population is experiencing stress and is therefore under threat."</p> <p>With the population estimated to be 2188 individuals, criterion D1 is no longer eligible. However the reports that the population is under stress, and a large number of dead and stressed/very stressed individuals recorded, shows that the species is undergoing continuing decline and now meets criteria for critically endangered.</p> <p>Named as <i>Styphelia longissima</i> on 16/3/2017.</p>
<b>Nominated national conservation status: category and criteria</b>	
Presumed extinct (EX) <input type="checkbox"/>	Critically endangered (CR) <input checked="" type="checkbox"/> Endangered (EN) <input type="checkbox"/> Vulnerable (VU) <input type="checkbox"/>
None (least concern) <input type="checkbox"/>	Data Deficient <input type="checkbox"/> Conservation Dependent <input type="checkbox"/>
<b>What are the IUCN Red List criteria that support the recommended conservation status category?</b>	<b>B1ab(iii,v)+B2ab(iii,v)</b>
<b>Eligibility against the IUCN Red List criteria (A, B, C, D and E)</b>	
Provide justification for the nominated conservation status; is the species eligible or ineligible for listing against the five criteria. For <b>delisting</b> , provide details for why the species no longer meets the requirements of the current conservation status.	
<b>A.</b>	<p>Population size reduction (evidence of decline)</p> <ul style="list-style-type: none"> <li>Insufficient data to assess</li> </ul>
<b>B.</b>	<p>Geographic range (EOO and AOO, number of locations and evidence of decline)</p> <ul style="list-style-type: none"> <li>EOO and AOO 4km<sup>2</sup></li> <li>Known from 1 location</li> <li>Continuing decline observed and projected in the quality of habitat (hydrology, weeds and past chaining) and number of mature individuals</li> <li><b>Meets criteria for Critically Endangered B1ab(iii,v)+B2ab(iii,v)</b></li> </ul>
<b>C.</b>	<p>Small population size and decline (population size, distribution and evidence of decline)</p> <ul style="list-style-type: none"> <li>Number of mature individual 2188</li> <li>Continuing decline observed and projected in the number of mature individuals</li> <li><b>Meets criteria for Endangered C2(a)(ii)</b></li> </ul>
<b>D.</b>	<p>Very small or restricted population (population size)</p> <ul style="list-style-type: none"> <li>Number of mature individual 2188</li> <li><b>Does not meet criteria</b></li> </ul>
<b>E.</b>	<p>Quantitative analysis (statistical probability of extinction)</p> <ul style="list-style-type: none"> <li>Insufficient data to assess</li> </ul>
<b>Summary of assessment information</b>	

EOO	Calculated to 4km <sup>2</sup> based on AOO estimation (0.135km <sup>2</sup> using a minimum convex polygon around the mature individuals as actual measure)	AOO	4km <sup>2</sup> (2x2km grid method). Area of remnant vegetation 0.135km <sup>2</sup> .	Generation length	Unknown
No. locations	1	Severely fragmented	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/>		
No. subpopulations	1	No. mature individuals	2188		
Percentage global population within Australia			100		
Percentage population decline over 10 years or 3 generations			Unknown		
<b>Threats</b> (detail how the species is being impacted)					
Threat (describe the threat and how it impacts on the species. Specify if the threat is past, current or potential)		Extent (give details of impact on whole species or specific subpopulations)		Impact (what is the level of threat to the conservation of the species)	
Mining – the remnant is within an active mining tenement and prospective for mineral sands. Past, current, future		Whole species		Low – the protected status of the species provides a level of protection to the remnant.	
Hydrological impacts – mineral sand mining is occurring immediately adjacent to the population which may be causing local lowering of the water table. Past, current, future		Whole species		High – Mining has occurred to the south, west and north of the remnant (see figure below) with rehabilitation leaving the landscape lower than prior to mining. The potential for a lowering of the water table under the remnant is high.	
Weeds – the remnant is open sandplain vegetation that is subject to weeds. Past, current, future		Whole species		Low – while remnant is not further disturbed weed risk is low, but would be a significant issue if the vegetation is burnt.	
Fire – the remnant is surrounded by cleared land. A single fire could impact the whole site. Regeneration would be dependent on fire frequency and resultant weed infestation. Past, current, future		Whole species		High – recurrent fire will degrade the remnant and impact the mature individuals.	
Clearing – the remnant is isolate due to previous clearing for agriculture and/or mining. The remnant was previously chained in preparation for clearing, but allowed to regrow. Past		Whole species		High – clearing would have reduced the size of the population, has degraded the existing remnant, and has removed any buffer to the current population.	
Phytophthora dieback – other species of <i>Leucopogon</i> / <i>Styphelia</i> are susceptible to dieback, and the species occurs within the dieback risk zone.		Whole species		Moderate – the susceptibility of this species to <i>Phytophthora</i> is unknown, and the sandy soil and now raised nature of the	

Future		remnant landscape may reduce the risk from dieback, but it is a potential risk.
<b>Rabbits</b> <ul style="list-style-type: none"> <li>Grazing impacts on the establishment of seedlings and thereby limiting natural recruitment.</li> <li>Disturbance to plants and roots from rabbit diggings.</li> </ul> Potential future	Whole species	Low– rabbits not currently identified as a threat, but have the potential to impact the population if they become established in the area.
<b>Management and Recovery</b>		
Is there a Recovery Plan (RP) or Conservation Management Plan operational for the species?		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<i>List all relevant recovery or management plans (including draft, in-preparation, out-of-date, national and State/Territory recovery plans, recovery plans for other species or ecological communities, or other management plans that may benefit or be relevant to the nominated species).</i> <ul style="list-style-type: none"> <li>N/a</li> </ul>		
<i>List current management or research actions, if any, that are being undertaken that benefit the conservation of the species.</i> <ul style="list-style-type: none"> <li>Monitoring is being carried out at subpopulation to determine plant numbers, condition and impact of threats;</li> <li>Surveys have been undertaken in the region to find new occurrences, but have been unsuccessful;</li> <li>The subpopulation is fenced;</li> <li>The mining company is aware of the population and is protecting it from direct impact.</li> </ul>		
<i>List further recommended management or research actions, if any, that would benefit the conservation of the species.</i> <p><b>Management</b></p> <ul style="list-style-type: none"> <li>Ongoing monitoring and observations of subpopulation and threats;</li> <li>Undertake surveys in any newly identified areas of potentially suitable habitat;</li> <li>Maintain liaison with the mining company to ensure the appropriate ongoing management of the site;</li> <li>Prepare a fire management plan for the location and implement to reduce risk from fire;</li> <li>Monitor weed occurrence and assess risk, and manage as necessary;</li> <li>Control rabbits, especially after fire, if monitoring identifies a potential risk;</li> <li>Ensure remnant fencing is maintained and stock excluded;</li> <li>Protect remnant under a nature conservation covenant or other mechanism of formal protection;</li> <li>Collect and store seeds to guard against the extinction of the natural population. Collections should aim to sample and preserve the maximum range of genetic diversity possible;</li> <li>Develop and implement dieback hygiene measures;</li> <li>Develop a translocation proposal and select a secure, disease free translocation site.</li> </ul> <p><b>Research</b></p> <ul style="list-style-type: none"> <li>Research biology and ecology of the species, with a focus on pollination effectiveness, seed viability,</li> </ul>		

<p>conditions required for natural germination, response to threats (particularly dieback disease) and disturbances and reproductive biology.</p> <ul style="list-style-type: none"> <li>Investigate changes in ground water levels due to the adjacent mining operations, and the potential impact on the species.</li> </ul>	
<b>Nomination prepared by:</b>	
<b>Contact details:</b>	
<b>Date submitted:</b>	03/01/2017
<p><i>If the nomination has been refereed or reviewed by experts, please provide their names and contact details:</i></p>	

2015 imagery of remnant showing extent of adjacent clearing and mining.



Summary of subpopulation information (detailed information to be provided in the relevant sections of the form)						
Location (include coordinates)	Land tenure	Survey information: Date of survey and No. mature individuals	Area of subpopulation	Site / habitat Condition	Threats (note if past, present or future)	Specific management actions
Iluka Resources mining tenement NE Eneabba	Private (mining lease)	2003: 300-400 2007: 2188	0.135km <sup>2</sup>	Healthy  Moderate	<p>Past</p> <ul style="list-style-type: none"> <li>• Mining</li> <li>• Hydrological impacts</li> <li>• Weeds</li> <li>• Fire</li> <li>• Clearing</li> </ul> <p>Present</p> <ul style="list-style-type: none"> <li>• Mining</li> <li>• Hydrological impacts</li> <li>• Weeds</li> <li>• Fire</li> </ul> <p>Future</p> <ul style="list-style-type: none"> <li>• Mining</li> <li>• Hydrological impacts</li> <li>• Weeds</li> <li>• Fire</li> <li>• <i>Phytophthora</i> dieback</li> <li>• Rabbits</li> </ul>	<ul style="list-style-type: none"> <li>• Ongoing monitoring of subpopulation;</li> <li>• Undertake further surveys;</li> <li>• Maintain liaison with the mining company;</li> <li>• Prepare a fire management plan;</li> <li>• Manage weeds as necessary;</li> <li>• Control rabbits, especially after fire, if necessary;</li> <li>• Ensure remnant fencing is maintained and stock excluded;</li> <li>• Protect remnant under a formal mechanism;</li> <li>• Collect and store seeds;</li> <li>• Develop and implement dieback hygiene measures;</li> <li>• Establish a new subpopulation in a secure location.</li> </ul>





## Nomination of a Western Australian species for listing as threatened, change of status or delisting. 2007 updated 2016

To fill out this form you **must** refer to the attached Guidelines. Incomplete forms will result in delays in assessment, or rejection of the nomination.

Answer all relevant sections, indicating when there is no information available. Note, this application form applies to both flora and fauna species, and hence some questions or options may not be applicable to the nominated species – for these questions, type or write “N/A”.

Some questions on the form have additional information in a **Help** box and these are marked with an asterisk (\*). If you require additional information, place your cursor in the text box into which you type your answer, press F1 and a Help box will pop-up.

<b>SECTION 1. NOMINATION</b>		
<b>1.1. Nomination information</b>		
Flora <input checked="" type="checkbox"/> yes	Fauna <input type="checkbox"/>	Nomination for <b>Change (WA); Addition (EPBC Act)</b>
<b>1.2. Scientific Name*</b>		
<i>Styphelia longissima</i> <i>Previously known as Leucopogon sp. ciliate Eneabba (F. Obbens &amp; C. Godden s.n. 3/7/2003)</i>		
<b>1.3. Common Name*</b>		
None		
<b>1.4. Current Conservation Status</b>		
Select one category for each of the five fields. If none, select ‘None’.		
<b>International</b> IUCN Red List None Categories and Criteria applicable to the highest rank category only e.g. B1ab(iv);D None		
<b>National</b> (EPBC Act 1999) None		
<b>State of Western Australia</b> Wildlife Conservation Notice: <b>Schedule 3 (Vulnerable)</b> IUCN Ranking: <b>Vulnerable D1+D2</b>		
Is the species listed as ‘Threatened’ in any other Australian State or Territory?		
No.		
Does the species have specific protection (e.g. listed on an annex or appendix) under any other legislation, inter-governmental or international arrangements e.g. CITES?		
No.		
<b>1.5. Nominated Conservation Status</b>		
Select one category for each of the five fields. If none, select ‘None’.		



<b>International</b> IUCN Red List
<b>National</b> ( <i>EPBC Act 1999</i> ): Critically Endangered B1ab(iii,v)+2ab(iii,v)
<b>State of Western Australia</b>  Wildlife Conservation Notice: Schedule 1 (Critically Endangered)  IUCN Status: Critically Endangered B1ab(iii,v)+2ab(iii,v)
<b>1.6. Reasons for the Nomination</b>
<p>Briefly summarise the reasons for the nomination in dot points. Please include details relevant to the IUCN Categories and Criteria where appropriate.</p> <ul style="list-style-type: none"> <li>• Currently known only from one subpopulation on private property (Iluka mining lease) which occurs in a block of remnant vegetation <i>ca.</i> 300m x 450m, near Eneabba (Woodman Environmental Consulting 2006).</li> <li>• The species has been the subject of a sustained and well planned search effort over a period of 16 days both in the immediate area of the known subpopulation and across the region including all of the neighbouring nature reserves and national parks. Refer Woodman Environmental Consulting 2006 for details.</li> <li>• Although the possibility of finding new populations always remains in a region where natural vegetation cover is still relatively high, the other possibility, that the species is now restricted to this single isolated population can no longer be discounted.</li> <li>• The outcome of monitoring by Iluka Resources between 2003 and 2007 estimated the population to be 2188 individuals (mainly mature but a small percentage juvenile).</li> <li>• The survey reported that the population is under stress, and recorded a large number of dead and stressed/very stressed individuals. Monitoring has thus shown the species is undergoing continuing decline and now meets criteria for critically endangered under criterion B.</li> </ul>

<b>SECTION 2. SPECIES</b>
<b>2.1. Taxonomy</b>
Describe the taxonomic history, using references, and describe the key distinguishing features that can be used to separate this taxa from closely related taxa.*
<p>Named as <i>Styphelia longissima</i> on 16/3/2017.</p> <p>The new species first came to light in 2003 when it was given the phrase name <i>Leucopogon</i> sp. Ciliate (F. Obbens and C. Godden sn). It has a number of distinctive features which appeared to place it with 2 other unnamed and uncommon species of <i>Leucopogon</i> sens. lat.: <i>L.</i> sp. Bonnie Hill, and <i>L.</i> sp. Ongerup from the Cascades area and southern wheatbelt respectively. It also seems likely that it is related to <i>Astroloma xerophyllum</i> sens lat. with which it co-occurs.</p> <p>The old concept of Epacridaceae (now usually referred to as Ericaceae sub-family Styphelioideae) contains a number of elements that are not well accommodated by the current generic classification (Quinn <i>et. al.</i> 2003). In particular a large number of western Leucopogons (c.40-50% of recognised species) need to be transferred to other genera – either into expanded concepts of existing genera (e.g. <i>Styphelia</i>) or more likely into several new genera. In the same way the study cited above also demonstrated that <i>Astroloma xerophyllum</i> together with <i>A. stomarrhena</i> are not true Astrolomas but are best placed together in a separate genus. It was believed that <i>L.</i> sp. ciliate Eneabba and the other two phrase named taxa mentioned above may have been con-generic with these two ‘Astrolomas’. DNA samples of all three of these ‘Leucopogons’ were forwarded to Sydney where the genetic work associated with the push to resolve the taxonomy of this family was being undertaken.</p> <p>However, regardless of these relationships, <i>Styphelia longissima</i> is a highly distinctive species and readily separated from its putative closest relatives and all other epacrids in the Northern Sandplains. From <i>L.</i> sp. Ongerup it can be separated by its larger floral parts and leaves, 2 locular and hairy ovary (rather than 3 locular and glabrous). From <i>L.</i> sp. Bonnie Hill, again by its larger floral parts and leaves and hairy ovary. It shares a 2 locular ovary with that species but has the external corolla surface glabrous rather than hairy as in sp. Bonnie Hill.</p> <p>Its closest relative in the Northern Sandplains is <i>Astroloma xerophyllum</i> which has larger floral parts and a 5 locular, glabrous ovary.</p>
Is this species conventionally accepted?* No <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> If no, explain why
Named as <i>Styphelia longissima</i> on 16/3/2017..
Describe any known hybridisation with other species in the wild, indicating where this occurs and how frequently.
Not known to hybridise and probably unlikely given that it does not appear to be particularly close to its putative relative <i>A. xerophyllum</i> with the latter also mostly flowering after <i>Styphelia longissima</i> has finished.
<b>2.2. Description</b>
Describe the physical appearance, habit, behaviour/dispersion and life history.*
Small, erect shrub to c. 70 cm high and wide but usually smaller, with fire sensitive rootstock. Leaves are adaxially concave, narrowly ovate (to c. 12mm long and 4 mm wide), with very long pungent mucros. Flowers white, erect. Fruit is an indehiscent drupe which, in common with many styphelioid ericads, are likely to be attractive to emus which act as a dispersal agent for the fruit.
<b>2.3. Distribution</b>
Describe the distribution of the species <u>in Australia</u> and, if possible, attach a map.
Is known from a subpopulation northeast of Eneabba.

<b>2.4. Habitat</b>	
Describe the non-biological habitat (e.g. aspect, topography, substrate, climate) and biological habitat (e.g. forest type, associated species, sympatric species). If the species occurs in various habitats (e.g. for different activities such as breeding, feeding, roosting, dispersing, basking etc) then describe each habitat.	
<p>Non-biological habitat</p> <p>The Depot Hill/Brandy Flat area is located north of the Eneabba – Three Springs Road, and has been heavily cleared in the past, with small areas of remnant vegetation remaining. The block of remnant vegetation in which this species was first recorded is roughly square in shape, measuring 300m x 450m, and is fenced on all sides. It is cut off from all other remnants in Depot Hill by pasture and current and past mining activity.</p>	<p>Biological habitat</p> <p>Woodman Environmental Consulting Pty. Ltd. mapped the plant communities of the Iluka lease areas, including Depot Hill, in 2001. This area was mapped as SH6: Low Heath dominated by <i>Allocasuarina campestris</i> on yellow sand (Woodman Environmental Consulting Pty Ltd 2002). It was a unique community mapped during that survey, with no other areas of native vegetation mapped as this plant community. The location of the remnant vegetation is on yellow sand, on a lower-slope position on Depot Hill, just above where the hill enters the flats. The vegetation is a shrubland to 2m with &gt;50% native plant cover and emergent <i>Xylomelum angustifolium</i>, <i>Eucalyptus tottiana</i>, <i>Banksia menziesii</i> and <i>Banksia attenuata</i>. An estimated 2188 plants occur in this location.</p>
Does the (fauna) species use refuge habitat e.g. in times of fire, drought or flood? Describe this habitat.	
Is the species part of, or does it rely on, a listed threatened ecological community? Is it associated with any other listed threatened species?	
There is reason to believe that the vegetation community in which the species occurs may be locally uncommon (refer Woodman Environmental Consulting 2006 page 2) but this has not yet been verified on a regional basis.	
<b>2.5. Reproduction</b>	
<p>Provide an overview of the breeding system.</p> <p>For flora: When does the species flower and set fruit? Is the seed produced viable? What conditions are needed for this? What is the pollinating mechanism? If the species is capable of vegetative reproduction, a description of how this occurs, the conditions needed and when. Does the species require a disturbance regime (e.g. fire, ground disturbance) in order to reproduce?</p> <p>Peak flowering in a normal season would be May-June. It could be expected that mature fruit would be present in September-October. There is little reason to doubt that viable seed is not regularly produced (plants of all ages are present). There is no reason to believe that the usual insect pollinators of <i>Leucopogon</i> sens. lat. would not be able to effect pollination in this species – the relative positions of the reproductive floral parts are typical of many species. The species is certainly not capable of vegetative reproduction. It is quite possible or even likely that a limited disturbance event could trigger germination – this is commonly observed in <i>Leucopogon</i> sens. lat.</p>	

<b>2.6. Population dynamics</b>
Provide details on ages of sexual maturity, extent of breeding success, life expectancy and natural mortality. Describe population structure (presence of juveniles/seedlings, mature and senescing individuals).
<p>When observed in July 2003 the subpopulation was reasonably healthy given the extended dry period that preceded that visit. The population seems quite typical of many members of <i>Leucopogon</i> sens. lat. with plants of various ages, including very young plants, and one or two dead ones, growing in fairly close proximity. Because the block clearly hasn't been burnt in many years it is safe therefore to assume that fire is not a pre-requisite for germination. Non lignotuberous members of <i>Leucopogon</i> are generally not long lived plants and based on personal observation probably live for between 8-15 years.</p> <p>Over the period 2003 to 2007, intensive surveys of the subpopulation recorded that "the small number of juveniles coupled with the presence of dead and stressed individuals (mature and juvenile) indicates that the population is experiencing stress and is therefore under threat". The health of the population was recorded in 2008 as 'moderate'.</p>
<b>Questions 2.7 and 2.8 apply to fauna nominations only</b>
<b>2.7. Feeding</b>
Summarise food items or sources and timing/availability.
Briefly describe feeding behaviours, including those that may make the species vulnerable to a threatening process.
<b>2.8. Movements</b>
Describe any relevant daily or seasonal pattern of movement for the species, including relevant arrival/departure dates if migratory.
Give details of home range/territories.
<b>SECTION 3. INTERNATIONAL CONTEXT</b>
<b>For species that are distributed both inside and outside Australia</b>
<b>3.1. Distribution</b>
Describe the global distribution. N/A
Give an overview of the global population size, trends, threats and security of the species outside of Australia. N/A
Explain the relationship between the Australian population and the global population. What percentage of the global population occurs in Australia? Is the Australian population distinct, geographically separate or does part, or all, of the population move in/out of Australia's jurisdiction? Do global threats affect the Australian population? N/A
<b>SECTION 4. CONSERVATION STATUS AND MANAGEMENT</b>
<b>4.1. Population</b>
What is the total population size in terms of number of mature individuals? Has there been any known reduction in the size of the population, or is this likely in the future? – give details.*
Estimated at 2188 plants at one location within an active mining lease on private property. Presence of dead and stressed individuals reported. Future reduction in plant numbers is thus projected.

Give locations of: captive/propagated occurrences or *ex situ* collections; recent re-introductions to the wild; and sites for proposed re-introductions. Have these sites been identified in recovery plans?

None

How many locations do you consider the species occurs in and why?\*

Known from one subpopulation; other surveys have failed to locate additional plants/subpopulations.

For flora, and where applicable, for fauna, detail the location, land tenure, estimated number of individuals, area of occupancy, and condition, for each known location or occurrence.

Location	Land status	Date of most recent survey	Number of individuals at location	Area of occupancy at location	Condition of site
Private property, Eneabba.	Private property (Iluka mining lease)	July 2003 2007	300-400 2188	300m x 450m	Healthy Moderate

Has the number of individuals been counted ☐, or is this an estimate ☒. Provide details of the method of determining the number of individuals.

Partial survey of known site only in 2003. Detailed survey and GPS of plants between 2003 and 2007.

Has there been any known reduction in the number of locations, or is this likely in the future? – give details.

No, however, it is possible that the known subpopulation is the last remnant of the previous range of the species as a result of clearing for agriculture and mining in the region. Alternatively it may be an outlying population, with additional populations located on yellow sands further to the east of Eneabba, however, no further collection have been made to 2016.

What is the extent of occurrence (in km<sup>2</sup>) for the species; explain how it was calculated and datasets used. If an accurate estimate is unavailable provide a range of values or a minimum or maximum area estimate.\*

0.135 km<sup>2</sup> (300m x 450m).

What is the area of occupancy (in km<sup>2</sup>) for the species; explain how it was calculated and datasets used. If an accurate estimate is unavailable provide a range of values or a minimum or maximum area estimate.\*

0.135 km<sup>2</sup> (300m x 450m)

Is the distribution of the species severely fragmented? Why?

One known subpopulation only within a 300m x 450m remnant surrounded by pasture and minesite.

Identify important occurrences necessary for the long-term survival and recovery of the species? This may include: key breeding populations, those near the edge of the range of the species or those needed to maintain genetic diversity.

Seed should be collected from this species as a matter of urgency. Translocation efforts could be considered. Acquisition of the remnant.

## 4.2. Survey effort

Describe the methods to conduct surveys. For example, (e.g. season, time of day, weather conditions); length, intensity and pattern of search effort (including where species not encountered); any limitations and expert requirements.

A search for Declared Rare Flora (DRF) and Priority Flora species within a small block of remnant native vegetation at Depot Hill, north of Eneabba, was undertaken in July 2003, for Iluka Resources Limited (Woodman Environmental Consulting 2003a). Several priority species were identified within the block during the survey, as well as a previously unidentified Epacridaceae species, which was temporarily named *Leucopogon* sp. Ciliate (F. Obbens and C. Godden sn), now *Styphelia longissima*. Despite the many vegetation surveys undertaken on both the Depot Hill area and the Iluka mining leases, as well as within the general region surrounding Eneabba by Woodman Environmental Consulting and the Department of Environment and Conservation, this species has not been previously identified, and its natural range and habitat preferences are currently unknown.

Iluka Resources Ltd commissioned Woodman Environmental Consulting to conduct further surveys to determine the range and habitat preferences of this species, prior to partial clearing of the only known population (Woodman Environmental Consulting Pty Ltd 2003a). Further surveying was undertaken in August 2003 (Woodman Environmental Consulting Pty Ltd 2003b), April 2004 (Woodman Environmental Consulting Pty Ltd 2004) and most recently in July 2006. Searching has been undertaken within the Iluka lease areas, Nature Reserves, National Parks and Road Reserves in the region from Alexander Morrison National Park north to the Mount Adams area east of Dongara. No further populations of this species were discovered during previous searches (August 2003 and April 2004). Areas surveyed during those investigations were Depot Hill/Brandy Flats, Eneabba Nature Reserve, IPL North, Tathra National Park, Wotto Nature Reserve, Alexander Morrison National Park, road reserves north and south of Eneabba and Beekeepers Nature Reserve.

Give details on the distinctiveness and detectability of the species, or the distinctiveness of its habitat, that would assist survey success.

In flower the species should be readily distinguishable from all epacrids in the Northern Sandplains with the possible exception of *Astroloma xerophyllum* – refer above for differences. A variant of *L. conostephioides* is vegetatively rather similar but with smaller leaves with a shorter terminal mucro. In flower or fruit the latter can be separated by its pendulous inflorescence.

The species occurs in heath over yellow sand plain which although not as common as white sand plain in the area is still frequent in the region as a whole. However there may be reasons to suspect that the vegetation community in which it occurs is uncommon.

Has the species been reasonably well surveyed? Provide an overview of surveys to date (include surveys of known occurrences and surveys for additional occurrences) and the likelihood of its current known distribution and/or population size being its actual distribution and/or population size. Include comments on potential habitat and surveys that were conducted, but where the species was not present/found.

Searching for this species was conducted during all investigations using a similar method. Areas of remnant native vegetation within the Eneabba area and radiating outward were inspected from vehicle and on foot to identify habitat resembling the known location of this species. Although a variety of habitat types were searched during this exercise, due to the lack of information on the preferred habitat of *Styphelia longissima*, searching was concentrated on areas of deep yellow sand over laterite, near the base of gentle sloping hills, as these characteristics are the main features of the known population. In general, each survey was conducted in areas that were not targeted during previous surveys, however overlap was included to ensure that each area received a thorough search.

Searching was conducted over a wide area, and consisted initially of an inspection of the known subpopulation to correctly identify the specific physical and habitat characteristics of this species and to monitor the health of the population. Searches were conducted on foot and by vehicle by two experienced botanists both on tracks and along transects within areas surveyed. One hundred and eighty eight individual sites were searched over the three investigations as shown on Figure 1. Each site indicates the location only, while searching involved transecting of vegetation at each location to cover as much habitat as possible.

At each search location the following records were made:

- GPS coordinates (WGS84 UTM Zone 50)
- Dominant species and description of plant community
- Soil type
- Position in topography

Searches were conducted during the following periods:

- Search 1; between 16th – 18th and 23rd – 25th August 2003
- Search 2; between 14th – 16th and 27th – 28th April 2004
- Search 3; between 10th – 14th July 2006



<p><b>4.3. Threats</b></p> <p>Identify past, current and future threats indicating whether they are actual or potential. For each threat describe:</p> <p>1. How and where they impact this species.</p> <p>Past land clearing in the immediate area is likely to have been the biggest factor in its recent decline. It seems probable that the species has not been common or has at least been very restricted since European settlement.</p> <p>The most immediate threat is still presumably the fact that the population occurs on an active mining lease. It is understood however that Iluka may have modified their planned operations to protect this remnant.</p> <p>2. What the effect of the threat(s) has been so far (indicate whether it is known or suspected; present supporting information/research, does it only affect certain populations?).</p> <p>N/A</p> <p>3. What is its expected effect in the future (is there supporting research/information; is the threat only suspected; does it only affect certain populations?).</p> <p>The single known population may also be vulnerable to disease, fire, changed hydrology as a result of local mining, or local extreme drought conditions.</p> <p>If possible, provide information threats for each occurrence/location:</p> <p>See above.</p>
<p>Identify and explain why additional biological characteristics particular to the species are threatening to its survival (e.g. low genetic diversity). Identify and explain any models addressing the survival of the species.</p> <p>N/A</p>
<p><b>4.4. Management</b></p> <p>Identify key management documentation for the species e.g. recovery plans, conservation plans, threat abatement plans etc.</p> <p>Nil</p>
<p>Does this species benefit from the management of another species or community? Explain.</p> <p>No.</p>
<p>How well is the species represented in conservation reserves or covenanted land? Which of these are actively managed for this species? Give details.</p> <p>No representation</p>
<p>Are there any management or research recommendations that will assist in the conservation of the species? Give details.</p> <p>N/A</p>
<p><b>4.5. Other</b></p> <p>Is there any additional information that is relevant to consideration of the conservation status of this species?</p> <p>No.</p>

SECTION 5. NOMINATOR	
Nominator(s) name.	
Signature(s) – This is not needed for emailed nominations as your email is proof of your identity.	
Organisation (s)	
Address	
Telephone	
Email	
Date 23-1-2007	
If the nomination has been refereed or reviewed by experts, provide their names and contact details:	
SECTION 6. REFERENCES	
What references or sources did you use to prepare your nomination? Include written material, electronic sources and verbal information. Include full references, address of web pages and the names and contact details of authorities with whom you had verbal communications.	
<ul style="list-style-type: none"> <li>• Quinn,C.J., Crayn, D.M., Hestlewood, M.M., Brown, E.A., Gadek, P.A. (2005). A molecular estimate of the phylogeny of Styphelieae (Ericaceae). <i>Australian Systematic Botany</i> 16:581-594.</li> <li>• Woodman Environmental Consulting (2003a). <i>DRF/Priority Flora Search of Native Vegetation Block at Depot Hill 2003</i> Unpublished report prepared for Iluka Resources Limited.</li> <li>• Woodman Environmental Consulting (2003b). <i>Regional Search for Leucopogon sp. Cilate (F. Obbens &amp; C. Godden s.n.)</i>. Unpublished Report prepared for Iluka Resources Limited.</li> <li>• Woodman Environmental Consulting (2004). <i>Second Regional Search for Leucopogon sp. Ciliate (F. Obbens &amp; C. Godden s.n.)</i>. Unpublished Report prepared for Iluka Resources Limited.</li> <li>• Woodman Environmental Consulting (2006). <i>Third Regional Search for Leucopogon sp. Ciliate (F. Obbens &amp; C. Godden s.n.)</i>. Unpublished Report prepared for Iluka Resources Limited.</li> </ul>	
SECTION 7. RECOMMENDATION	
7.1. Approval (to be completed by the TSSC Chair)	
Is the nomination accepted? Yes <input type="checkbox"/> No <input type="checkbox"/>	
Status for the State of WA	
IUCN Status	
Categories and Criteria	
Priority	
DEC Region(s)	
DEC District(s)	

<b>7.2. Non-approval</b>	
If nomination not accepted, give reasons.	
<b>7.3. Date of recommended change of status</b>	
<b>7.4. Comments</b>	
<p>Were any conditions applied to the recommended change in conservation status? Provide details of actions required to be completed if nomination was deferred or rejected.</p> <p>Were any management or research recommendations made for the species? Provide details.</p>	



