

## 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>Lerista neviniae</i> (Nevin's slider)</b>
<b>Nomination for</b> (addition, deletion, change):	<b>Addition</b>
<b>Nominated conservation category and criteria:</b>	<b>Endangered B1+2ab(ii,iii)</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>Lerista neviniae</i>			
Common name:	Nevin's slider			
Family name:	Scincidae	Fauna <input checked="" type="checkbox"/>	Flora <input 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 (WC Act 1950)	16/02/2012	Vulnerable	D2
	2. WA (WC Act 1950)	2016	Endangered	B1+2ab(ii,iii)
	3.			
Consistent with Schedule 1, item 2.7 (h) and 2.8 of the Common Assessment Method Memorandum of Understanding, it is confirmed that:				
<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:	See attached Nomination Form submitted to the WA TSSC in 2011.			
<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:	Targeted surveys have been conducted for the species since 2007. Further surveys have occurred since the species was listed in WA in 2012. The updated data is presented in:  Gaikhorst, G. (2015). Ecology and distribution of the slider skink, <i>Lerista neviniae</i> . <i>Journal of the Royal Society of Western Australia</i> 98: 131-136.			
<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:	<b>2011:</b> discussed the threatening processes that are potentially impacting on the species e.g. port expansion. The TSSC noted that the survey effort for the species in the area was comprehensive. The TSSC recommended support of the nomination of the <i>Lerista neviniae</i> to VU D2 based on the limited area of occupancy ~5km <sup>2</sup> and occurrence at a single location.			

<p><b>2016:</b> Since the species' listing in 2012, clearing permits have been granted for vegetation within the species' distribution, and the impacts from mining-related land development and recreation activities are ongoing. The species is thus undergoing continuing and projected decline in AOO and area, extent and quality of habitat due to mining expansion. Based on the existence of these identified threatening processes that affect different occurrences of the species, the species is now considered to occur at more than one location as not all areas are at risk from clearing as the major threat. As such, the species meets criteria for Endangered B1+2ab(ii,iii).</p>		
<p><b>Nominated national conservation status: category and criteria</b></p>		
<p>Presumed extinct (EX) <input type="checkbox"/>      Critically endangered (CR) <input type="checkbox"/>      Endangered (EN) <input checked="" type="checkbox"/>      Vulnerable (VU) <input type="checkbox"/></p>		
<p>None (least concern) <input type="checkbox"/>      Data Deficient <input type="checkbox"/>      Conservation Dependent <input type="checkbox"/></p>		
<p><b>What are the IUCN Red List criteria that support the recommended conservation status category?</b></p>	<p><b>B1+2ab(ii,iii)</b></p>	
<p><b>Eligibility against the IUCN Red List criteria (A, B, C, D and E)</b></p>		
<p><i>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.</i></p>		
<b>A.</b>	Population size reduction (evidence of decline)	<ul style="list-style-type: none"> <li><b>No information to assess</b></li> </ul>
<b>B.</b>	Geographic range (EOO and AOO, number of locations and evidence of decline)	<ul style="list-style-type: none"> <li>(B1) EOO is estimated to be between 19-39 km<sup>2</sup> and (B2) AOO is estimated to be 6 km<sup>2</sup> by Gaikhorst (2015). The AOO was calculated as 60 km<sup>2</sup> using a 2x2 km grid method.</li> <li>(a) Based on differing threat of land clearing/development, being the primary threatening process, based on the land form and land tenure (Recreation, Harbour and UCL), the species is considered to be found at 4 locations (see Figures 2 to 4).</li> <li>(b) The species is mostly threatened by land development and recreational activities which are causing habitat degradation and loss. Both of these threats are directly linked to and increasing due to the ongoing expansion of the mining industry in the area. Therefore there is an observed and projected ongoing decline in (ii) AOO and (iii) area, extent and quality of habitat due to impacts from recreational activities and vegetation clearing for the purposes of infrastructure development and mining.</li> <li><b>Meets criteria for Endangered B1+2ab(ii,iii)</b></li> </ul>
<b>C.</b>	Small population size and decline (population size, distribution and evidence of decline)	<ul style="list-style-type: none"> <li><b>No population information to assess</b></li> </ul>
<b>D.</b>	Very small or restricted population (population size)	<ul style="list-style-type: none"> <li><b>No population information to assess</b></li> </ul>

E.	Quantitative analysis (statistical probability of extinction)	<ul style="list-style-type: none"> <li><b>No information to assess</b></li> </ul>			
<b>Summary of assessment information</b>					
EOO	<p>The 2011 nomination stated the EOO was approximately 32 km<sup>2</sup>. Using alpha-hull and convex polygon calculations, the EOO is estimated to be between 19-39 km<sup>2</sup> (see below)</p> <p>23 km<sup>2</sup> (alpha hull, excludes Jockey's Hill record as an "outlier")</p> <p>19 km<sup>2</sup> (alpha hull, excludes Jockey's Hill record as an "outlier," clipped to coastline)</p> <p>29 km<sup>2</sup> (convex polygon, all records)</p> <p>23 km<sup>2</sup> (convex polygon, all records, clipped to coastline,)</p> <p>39 km<sup>2</sup> (convex polygon, all records and suitable habitat)</p> <p>31 km<sup>2</sup> (convex polygon, all records and suitable habitat, clipped to coastline)</p>	AOO	<p>The AOO was calculated as 60 km<sup>2</sup> using a 2x2km grid.</p> <p>The 2011 nomination stated that the AOO was approximately 5 km<sup>2</sup>. The AOO is now considered to be 6 km<sup>2</sup> based on suitable habitat available (Gaikhorst 2015).</p>	Generation length	Unknown
No. locations	4, based on threats relating to land tenure and use	Severely fragmented	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/>		
No. subpopulations	9 (based on suitable habitat, see Fig. 1 in Gaikhorst (2015))	No. mature individuals	Unknown (75 individuals captured, 15 of which are vouchered museum specimens)		
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)	
<p>Land development in response to the mining industry</p> <ul style="list-style-type: none"> <li>Established port infrastructure and worker accommodation with ongoing development plans has led to vegetation clearing and fragmentation of the species' habitat</li> </ul>		Entire excluding the coastal dunes (see attached maps)		High	

<ul style="list-style-type: none"> <li>Past, present and future</li> </ul>		
<p>Recreational activities</p> <ul style="list-style-type: none"> <li>Due to an increase in the human population in the area in response to the mining industry, there has been an increase in off-road vehicles and human traffic on coastal dunes</li> <li>Present and future</li> </ul>	Entire (See attached maps)	Medium
<p>Fires and firewood collection</p> <ul style="list-style-type: none"> <li>Reduced fallen woody debris that can be used as refugia by the species. Could lead to increased competition with <i>Lerista clara</i></li> <li>Present and future</li> </ul>	Entire	Unknown
<p>Habitat degradation from weeds</p> <ul style="list-style-type: none"> <li>Buffel Grass has caused the deaths of <i>Lerista bipes</i> on Dixon Island through entrapment. This may also impact on populations of <i>L. neviniae</i></li> <li>Present and future</li> </ul>	Entire	Unknown
<p>Climate change</p> <ul style="list-style-type: none"> <li>Leading to sea level rise and an increase in frequency and severity of stochastic events (cyclones)</li> <li>Future</li> </ul>	Entire	High
<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"/>
<p>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).</p> <ul style="list-style-type: none"> <li>N/A</li> </ul>		
<p>List current management or research actions, if any, that are being undertaken that benefit the conservation of the species.</p> <ul style="list-style-type: none"> <li>Conditions are applied to clearing permits in areas where the species is known to exist.</li> </ul>		
<p>List further recommended management or research actions, if any, that would benefit the conservation of the species. Please ensure that this section addresses all identified threats.</p> <ul style="list-style-type: none"> <li>Impose restrictions on clearing permits to prevent fragmentation and widespread clearing of the species' habitat, and prevent clearing in areas of prime habitat.</li> <li>Rehabilitate dune habitat in areas where it has been severely impacted by recreational activities, and manage dune use by recreationalists.</li> <li>Control firewood collection on managed lands.</li> </ul>		

<ul style="list-style-type: none"> <li>• Conduct further research to determine more about the species' ecology and biology, and how it responds to threats, including impact of weeds such as buffel grass.</li> <li>• Investigate the possibility of translocations to areas with suitable habitat, preferably on conservation estate.</li> </ul>	
<b>Nomination prepared by:</b>	
<b>Contact details:</b>	
<b>Date submitted:</b>	31/05/2016
<i>If the nomination has been refereed or reviewed by experts, please provide their names and contact details:</i>	

**Summary of subpopulation information** (detailed information to be provided in the relevant sections of the form)

Subpopulations are based on the presence of *Lerista neviniae* records within continuous suitable habitat. See the map from Gaikhorst (2015) showing suitable habitat:



**Figure 1.** Habitat areas available to *L. neviniae* within known locations.



Occurrences (include coordinates)	Land tenure	Survey information: Date of survey and No. mature individuals	AOO	Site / habitat Condition	Threats (note if past, present or future)	Specific management actions
Jockeys Hill, Cleaverville  -20.6494, 117.0352	Live exploration tenement; Crown Reserve (recreation)	2009-2013		Degraded	Land development for mining industry (past, present and future) Recreational activities (present and future) Fires and firewood collection (present and future) Weed invasion (present and future): Buffel grass <i>Chenchrus ciliaris</i> occurs in this area and has been known to cause deaths of other <i>Lerista</i> species Climate change (future)	Any clearing permits in the area should assess potential impacts on the area, and should ensure that little to no clearing of their habitat is conducted as areas of continuous habitat are required.
Dixon Island  -20.6184, 117.0764	Live exploration tenement; UCL	2009-2013		Unknown but likely to be degraded or become degraded in the future	Land development for mining industry (past, present and future) Weed invasion (present and future): Buffel grass <i>Chenchrus ciliaris</i> occurs in this area and has been known to cause deaths of other <i>Lerista</i> species Climate change (future)	See above
Anketell Point  -20.6447, 117.0971	Live exploration tenement; Crown Reserve (harbour)	2009-2013		Unknown but likely to be degraded or become degraded in the future	Land development for mining industry (past, present and future) Weed invasion (present and future): Buffel grass <i>Chenchrus ciliaris</i> occurs in this area and has been known to cause deaths of other <i>Lerista</i> species Climate change (future)	See above
West coast of Cape Lambert  -20.6300, 117.1396	Live exploration tenement; Crown Reserve (recreation)	2009-2013		Degraded	Land development for mining industry (past, present and future) Recreational activities (present and future) Fires and firewood collection (present and future) Weed invasion (present and future): Buffel grass <i>Chenchrus ciliaris</i> occurs in this area and has been known to cause deaths of other <i>Lerista</i> species	See above  Manage impacts of recreational use of dunes



					Climate change (future)	
Between Cape Lambert and Point Samson  -20.6126, 117.1776	Live exploration tenement; Crown Reserve (harbour)	2009-2013		Degraded	Land development for mining industry (past, present and future) Recreational activities (present and future) Fires and firewood collection (present and future) Weed invasion (present and future): Buffel grass <i>Chenchrus ciliaris</i> occurs in this area and has been known to cause deaths of other <i>Lerista</i> species Climate change (future)	See above  Manage impacts of recreational use of dunes
Point Samson  -20.6343, 117.1968	Live exploration tenement; Crown Reserve (recreation)	2009-2013		Degraded	Land development for mining industry (past, present and future) Recreational activities (present and future) Fires and firewood collection (present and future) Weed invasion (present and future): Buffel grass <i>Chenchrus ciliaris</i> occurs in this area and has been known to cause deaths of other <i>Lerista</i> species Climate change (future)	See above  Manage impacts of recreational use of dunes
Inland dune, 3.5km W of Point Samson  -20.6307, 117.1645	Live exploration tenement; Crown Reserve (harbour)	2009-2013		Degraded	Land development for mining industry (past, present and future) Weed invasion (present and future): Buffel grass <i>Chenchrus ciliaris</i> occurs in this area and has been known to cause deaths of other <i>Lerista</i> species Climate change (future)	See above



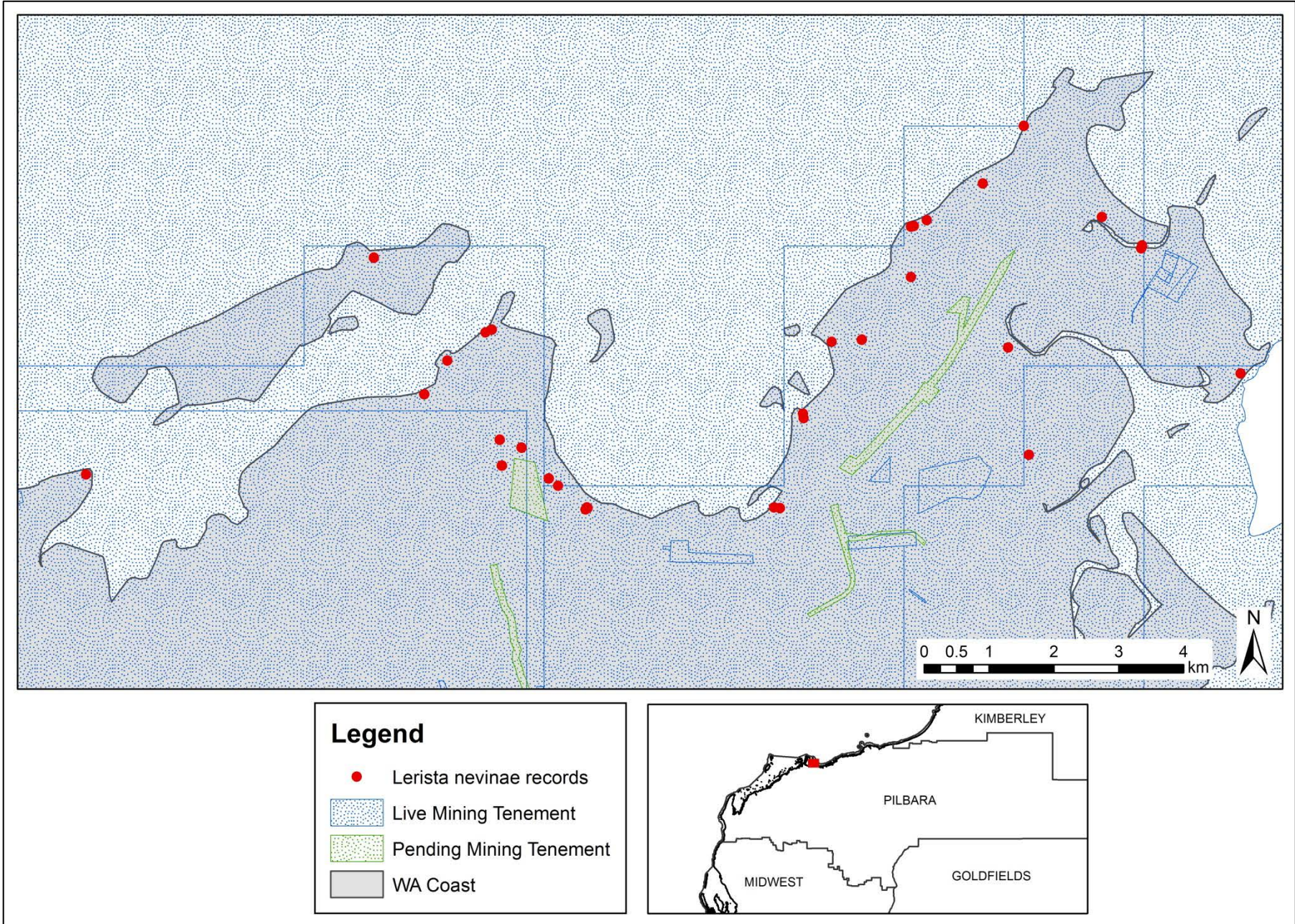


Figure 2: Map of *Lerista neviniae* records overlaid with mining tenements (live and pending)



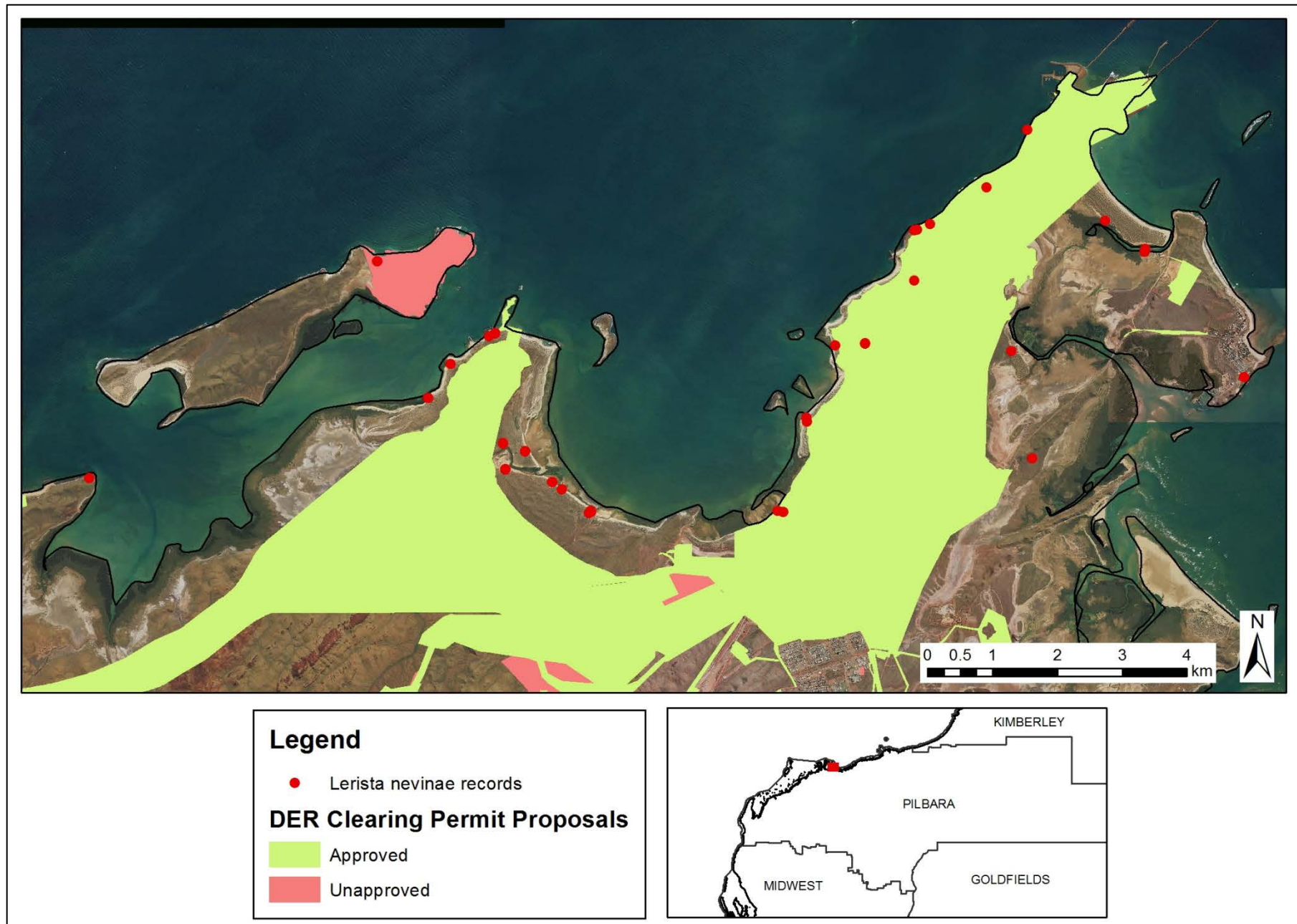
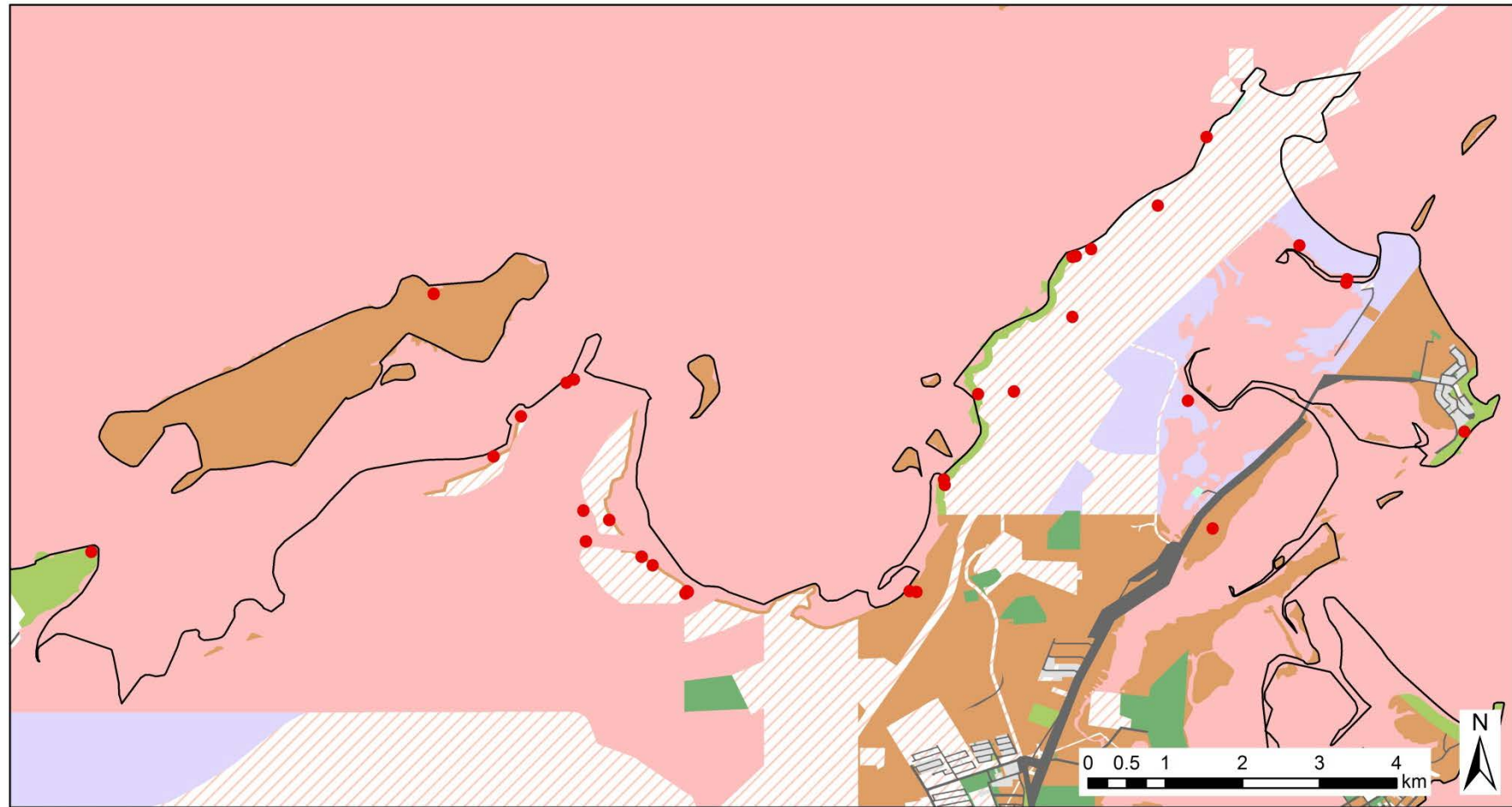


Figure 3: Map of *Lerista neviniae* records overlaid with DER Clearing Permit proposals (approved and unapproved)



### Legend

- |                                   |                        |
|-----------------------------------|------------------------|
| ● <i>Lerista neviniae</i> records | Unallocated Crown Land |
| ■ Crown Reserve: Recreation       | ■ Crown Lease          |
| ■ Crown Reserve: Harbour Purpose  | ■ Freehold             |
| ■ Crown Reserve: Industry         | ■ Public Roads         |
| ■ Other Crown Reserve             | ■ WA Coast             |

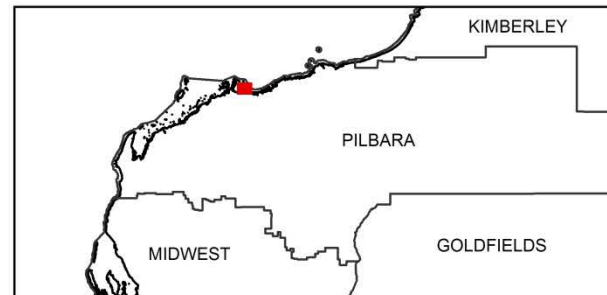


Figure 4: Map of *Lerista neviniae* records overlaid with land tenure (incl. Crown Reserves with different purposes)



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## Form to nominate a Western Australian species for listing as threatened, change of category or delisting 2011.

**NOTICE:** Incomplete forms may result in delays in assessment, or rejection of the nomination. To fill out this form you must refer to the Guidelines and contact the relevant Officer in the DEC Species and Communities Branch. DEC staff can advise you on how to fill out the form and may be able to supply additional, unpublished information.

Answer all relevant sections, filling in the white boxes and 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 “N/A”.

To mark boxes with a **cross**, double click the box and select not checked or checked.

SECTION 1. NOMINATION					
<b>1.1. Nomination for:</b>					
Flora <input type="checkbox"/>	Fauna <input checked="" type="checkbox"/>	Threatened / DRF <input checked="" type="checkbox"/>	Change of category <input type="checkbox"/>	Delisting <input type="checkbox"/>	
<b>1.2. Scientific Name</b>					
This name will be used to identify the species on all official documentation. Use the approved name used by the Western Australian Museum or Herbarium. If this is not possible, use unpublished names or numbers of voucher specimens.					
<i>Lerista neviniae</i> Smith and Adams 2007					
<b>1.3. Common Name</b>					
If the species has a generally accepted common name, please show it here. This name will be used on all official documentation.					
NA					
<b>1.4. Current Conservation Status. If none, type 'None'.</b>					
	IUCN Red List Category e.g. Vulnerable		IUCN Red List Criteria e.g. B1ab(iv);D(1)		
International IUCN Red List					
National EPBC Act 1999					
State of Western Australia					
State of WA Priority	1 <input checked="" type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
Is the species listed as 'Threatened' in any other Australian State or Territory? If Yes, list these States and/or Territories and the status for each.					

No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>					
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? If Yes, please provide details.					
No <input checked="" type="checkbox"/> Yes <input type="checkbox"/>					
1.5. Nominated Conservation Status.					
	IUCN Red List Category e.g. Vulnerable			IUCN Red List Criteria e.g. B1ab(iv);D(1)	
State of Western Australia	Vulnerable			D2	
State of WA Priority	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
1.6. Reasons for the Nomination.					
Briefly summarise the reasons for the nomination in dot points. Please include details relevant to the IUCN Categories and Criteria where appropriate.					
<p>The species is geographically restricted and can be considered a short range endemic species (SRE). It has a restricted area of occupancy of approximately 5km<sup>2</sup> (489.9ha) which has been calculated by determining suitable habitat (Biota 2010) and only occurs at one location.</p> <p>This species was only known from the type locality between Point Samson and Cape Lambert, Pilbara, at the time of formal description published in 2007. There have been targeted surveys for this species, from 2007 to 2010 for development applications in the area, and the known range now extends west to Dixon Island, a distance approximately 18km from the original locality. Surveys further west to Karratha and east to Cossack failed to locate the species or other suitable habitat.</p> <p>It has not been found to occur on any conservation reserve or covenanted land. It is under imminent threat of port and rail developments and mining in the Cape Lambert area which will clear or alter the habitat of this species.</p>					
SECTION 2. SPECIES					
2.1. Taxonomy.					
Describe the taxonomic history, using references, and describe the key distinguishing features that can be used to separate this taxon from closely related taxa. Include details of the type specimen, changes in taxonomy, scientific names and common names used for the species.					
<p><i>Lerista neviniae</i> was formally described in 2007 as a result of the Smith and Adams <i>Lerista muelleri</i> species-group revision. The Holotype was collected in 1998 and the Paratypes in 1998 and 2002 near Cape Lambert. The specimens were previously ascribed to <i>Lerista muelleri</i>.</p> <p>It is the only species in the <i>L. muelleri</i> species group with a continuous black paravertebral stripe and 18 midbody scale rows (Smith and Adams 2007).</p>					
Is this species conventionally accepted? If no, explain why. For example, is there any controversy about the taxonomy? For undescribed species, detail the location of voucher specimens (these should be numbered and held in a recognised institution and be available for reference purposes).					
No <input type="checkbox"/> Yes <input checked="" type="checkbox"/>					
Describe any known hybridisation with other species in the wild, indicating where this occurs and how frequently.					
None known					



## 2.2. Description

**Describe the physical appearance, habit, behaviour/dispersion and life history. Include anatomy or habit (e.g. size and/or weight, sex and age variation, social structure) and dispersion (e.g. solitary, clumped or flocks etc), and life history (eg short lived, long lived, geophytic, etc).**

The description of *Lerista neviniae* is as per type specimens; SVL 34-41mm, TL 42-46mm, 18 midbody scale rows. The top of its head is heavily pigmented with blackish-brown, it has a prominent continuous paravertebral stripe, a solid upper lateral stripe, the back is almost white, flanks and belly are immaculate white, the tail is yellowish, and the upper surfaces of limbs are spotted and streaked dark brown.

It is a small fossorial or semi-fossorial skink, restricted to pale coastal sands, dune habitat vegetated with *Acacia spp* and low shrubs over spinifex.



*Lerista neviniae* (photo by Brad Maryan, WA Museum) (Biota 2008b).

## 2.3. Distribution

**Describe the distribution of the species in Australia and, if possible, provide a map.**

In 2007 the species was only known from the type locality between Point Samson and Cape Lambert, Pilbara (Smith and Adams 2007).

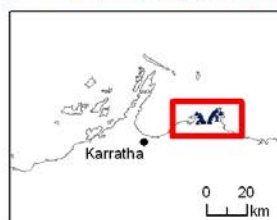
After targeted surveys from 2007 to 2010, it is known to occur on an estimated 18km length of coastal dune between Pope's Nose Creek, near Point Samson, and the southwest corner of Dixon Hedland. The total extent of suitable habitat in this area is calculated as 489.9ha (Biota 2010).





▲ *Lerista neviniae* records

AUSLIG 250k Imagery - GDA Lat/Long



0 5 km

GDA94

Prepared 1 March 2011



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## 2.4. Habitat

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.

### Non-biological habitat

It is found on the pale coastal sands, dune habitat immediately adjacent to the sea, on the Pilbara coast (Smith & Adams 2007)

### Biological habitat

It occurs in areas vegetated with *Acacia* spp and low shrubs over Spinifex. *Acacia coriacea* over *Triodia epactia* and *Cenchrus* sp (Biota 2010).

**Does the (fauna) species use refuge habitat e.g. in times of fire, drought or flood? Describe this habitat.**

Unknown.

**Is the species part of, or does it rely on, a listed threatened ecological community? Is it associated with any other listed threatened species?**

It does not occur in and threatened or priority ecological community and is not associated with any listed flora or fauna species.

<b>2.5. Reproduction</b>
<b>Provide an overview of the breeding system.</b>
<b>For <u>fauna</u>:</b> Provide an overview of the breeding system and breeding success, including: when does it breed; what conditions are needed for breeding; are there any breeding behaviours that may make it vulnerable to a threatening process?
<b>For <u>flora</u>:</b> 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?
Oviparous, clutch size unknown but is likely to be small due to the small adult body size. Clutches of 2-4 eggs have been recorded in a study of another <i>Lerista</i> species, and they are likely to have only one clutch per year (Smyth & Smith 1974). Breeding adults of other species in the <i>L. muelleri</i> species group have been collected in spring (Smith & Adams 2007, Smyth & Smith 1974) therefore it is likely that this timing is similar for <i>L. nevinae</i> . The end of the reproductive season is likely to be towards the end of summer, as this is the case for other <i>Lerista</i> species (Qualls & Shine 1998).
<b>2.6. Population dynamics</b>
<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).</b>
Unknown
<b>Questions 2.7 and 2.8 apply to <u>fauna</u> nominations only</b>
<b>2.7. Feeding</b>
<b>Summarise food items or sources and timing/availability.</b>
While the feeding has not been directly studied for <i>L. nevinae</i> it is likely that they are nocturnal, as are most members of <i>Lerista</i> , feeding on small invertebrates and larvae (Cogger 1992, Pough <i>et. al.</i> 1997).
<b>Briefly describe feeding behaviours, including those that may make the species vulnerable to threatening processes.</b>
Feeding behaviours have not been studied directly for <i>L. nevinae</i> however it is likely that it is similar to that described in Cogger 1992 for the genus <i>Lerista</i> . "Most are burrowing species which are usually found in loose soil or sand beneath stone, logs, termite mounds etc., where they feed on ants, termites and other small insects. At night, they emerge to feed on the surface, immediately 'diving' into loose sandy substrates when disturbed."
<b>2.8. Movements</b>
<b>Describe any relevant daily or seasonal pattern of movement for the species, including relevant arrival/departure dates if migratory. Provide details of home range/territories.</b>
They are fossorial or semi-fossorial, sand-swimming, nocturnal lizards. In general <i>Lerista</i> species feed on the surface at night and if disturbed immediately 'dive' into loose sand which results in distinctive, disrupted wavy tracks (Cogger1992). Pough <i>et. al.</i> 1997 studied captive members of the <i>Lerista</i> genus and summarised that <i>Lerista</i> rarely appeared on the surface, but they moved beneath the sand leaving sinuous trails to mark their passage. Observation showed that they were most active from 1600 to 2000 hours.
<b>SECTION 3. INTERNATIONAL CONTEXT</b>
<b>For species that are distributed both in <u>Australia</u> and in <u>other countries</u>.</b>
<b>3.1. Distribution</b>
<b>Describe the global distribution.</b>
NA
<b>Provide an overview of the global population size, trends, threats and security of the species outside of Australia.</b>

NA					
<b>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?</b>					
NA					
<b>SECTION 4. CONSERVATION STATUS AND MANAGEMENT</b>					
<b>4.1. Population</b>					
<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? – provide details. Are there other useful measures of population size and what are they? Or if these are unavailable, provide an estimate of abundance (e.g. scarce, locally abundant etc).</b>					
Unknown					
<b>Provide locations of: captive/propagated occurrences or <i>ex situ</i> collections; recent re-introductions to the wild; and sites for proposed re-introductions. Have these sites been identified in recovery plans?</b>					
None					
<b>How many locations do you consider the species occurs in and why? Where a species is affected by more than one threatening event, location should be defined by considering the most serious plausible threat.</b>					
This species only occurs in one location, Cape Lambert area.					
<b>For <u>flora</u>, and where applicable, for <u>fauna</u>, detail the location, land tenure, estimated number of individuals, area of occupancy, and condition of site for each known date, location or occurrence.</b>					
<b>Date of survey</b>	<b>Location</b>	<b>Land status</b>	<b>Number of individuals at location</b>	<b>Area of occupancy at location</b>	<b>Condition of site</b>
1998 2002 October 2007 December 2007 March 2008 July 2008 June 2009 February 2010	Cape Lambert area, between Point Samson and Dixon Island.	The entire area is mining tenement, majority of which is 'live'. Cadastre is a combination of UCL, freehold, pastoral lease, crown reserve for recreation and industry.	Total of 52 individuals recorded.	489.9ha	Natural habitat, some parts referred to as not pristine, with development in some areas
<b>Has the number of individuals been counted, or is this an estimate? Provide details of the method of determining the number of individuals.</b>					
The total number of individuals is unknown. It is only known the number of individuals that have been captured during fauna surveys and targeted searches.					
<b>Has there been any known reduction in the number of locations, or is this likely in the future? –</b>					

<b>provide details.</b>
Not known, the species has only recently been described.
<b>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. Include estimates of past, current and possible future extent of occurrence. If available, include data that indicates the percentage decline over 10 years or 3 generations (whichever is longer) that has occurred or is predicted to occur.</b>
The extent of occurrence is approximately 32km <sup>2</sup> . It has a restricted area of occupancy of approximately 5km <sup>2</sup> (489.9ha).
<b>Is the distribution of the species severely fragmented? Why?</b>
No it occurs in only one location.
<b>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.</b>
The species is only found in one location therefore the entire population of the species and suitable habitat in the Cape Lambert area should be considered necessary for the long-term survival of the species.
<b>4.2. Survey effort</b>
<b>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.</b>
Pitfall traps, targeted searching, hand foraging, digging and raking of sand and debris/leaf litter.
<b>Provide details on the distinctiveness and detectability of the species, or the distinctiveness of its habitat, that would assist survey success.</b>
It occurs only on pale coastal sands, it was not located in any survey sites on heavier soils or in rocky areas, therefore this requirement means surveys can be designed to target the species based on this substrate requirement.
Individuals of the species are easily identified in the field as it is the only species in the <i>L. muelleri</i> species group with a continuous black paravertebral stripe and 18 midbody scale rows (Smith and Adams 2007).
<b>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.</b>
Yes, the species has been the subject of surveys since 2007, some of which were targeting the species, and was recorded in surveys prior to the formal description. It was not located in surveys in dunes at Cleaverville Beach and east of the Karratha townsite, Back Beach (west of Cape Lambert). It was not found in surveys to the east of Cape Lambert, at Point Samson and Cossack. Survey sites in heavy soils and rocky habitat adjacent to dunes failed to locate the species (Biota 2008a, 2008b, 2009, 2010, and Phoenix 2010).
Smith and Adams 2007 revision of the <i>L. muelleri</i> species group involved examining nearly 2000 museum specimens within the species group and lead to the description of nine new species. Three of the specimens examined were <i>L. nevinae</i> .

<b>4.3. Threats</b> <b>Identify past, current and future threats indicating whether they are actual or potential. For each threat describe:</b> <b>a). how and where they impact this species</b> <b>b). what the effect of the threat(s) has been so far (indicate whether it is known or suspected</b> <b>c). present supporting information/research</b> <b>d). does it only affect certain populations?</b> <b>e). what is its expected effect in the future (is there supporting research/information; is the threat only suspected; does it only affect certain populations?).</b>				
<p>Human activity, Land development, clearing, vehicles, stochastic events, cyclones, climate change, sea level rise, and fragmentation causing discontinuous habitat.</p> <p>There are currently proposed developments at Cape Lambert; Rio Tinto's port expansion, API's Anketell Point/Dixon Island port development and MCC's iron ore mining proposal. Development in this area will result in the clearing of <i>L. neviniae</i> habitat for structure footprints and for associated infrastructure, such as roads. Habitat fragmentation could result from developments in the area. The species requires a sand substrate for movement and is not likely to be able to move across artificial substrates or barriers that developments will create. The discontinuous habitat that potentially results from development is a threat to this species.</p> <p>None of the known habitat for the species occurs on conservation estate or covenanted land. While part of the known habitat is within crown reserves the purpose of these reserves are recreation and industry which does not offer any protection to the species.</p> <p>Climate change is a potential threat to the species. The potential for sea level rise as a result of global warming proposes a direct threat to this species in the future as the species is only known to occur in the near coast sand dunes in the Cape Lambert areas and these dunes could be submerged or become isolated from others areas. Stochastic events such as cyclones also pose a threat as the high sea swell and flooding associated could destroy or significantly alter the habitat, as well as the possibility of the death of individuals from drowning. Translocations of this species could be investigated in order to ensure that there are individuals that will survive unknown future events.</p>				
<b>If possible, provide information threats for each current occurrence/location:</b>				
<b>Location</b>	<b>Past threats</b>	<b>Current threats</b>	<b>Potential threats</b>	<b>Management requirements (see section 4.4)</b>
Cape Lambert area, between Point Samson and Dixon Island.		Land development, clearing		Areas of continuous habitat are required
		Mining		
		Human recreation, such as 4x4 vehicles on sand dunes		
			Climate change, sea level rise	
			Stochastic events, cyclones	
			Fragmentation	Areas of continuous habitat are required

<b>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.</b>				
None known.				
<b>4.4. Management</b>				
<b>Identify key management documentation for the species e.g. recovery plans, conservation plans, threat abatement plans etc.</b>				
None.				
<b>Does this species benefit from the management of another species or community? Explain.</b>				
None.				
<b>How well is the species represented in conservation reserves or covenanted land? Which of these are actively managed for this species? Provide details.</b>				
The species is not represented in conservation reserves or covenanted land.				
<b>Are there any management or research recommendations that will assist in the conservation of the species? Provide details.</b>				
Specific studies into the ecology and biology of the species. Investigation into the possibility of translocations.				
<b>4.5. Other</b>				
<b>Is there any additional information that is relevant to consideration of the conservation status of this species?</b>				
<b>SECTION 5. NOMINATOR</b>				
<b>Nominator(s) name(s)</b>				
<b>Organisation(s)</b>				
<b>Address(s)</b>				
<b>Telephone number(s)</b>				
<b>Email(s)</b>				
<b>Date</b>		27 January 2011		
<b>If the nomination has been refereed or reviewed by experts, provide their names and contact details.</b>				
<b>SECTION 6. REFERENCES</b>				
<b>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.</b>				
Biota Environmental Sciences (2008a) Cape Lambert Port B Development Seasonal Fauna Survey. Unpublished report prepared for Pilbara Iron Pty Ltd, July 2008.				

Biota Environmental Sciences (2008b) A Survey of Coastal Dunes Between Cossack and Karratha for *Lerista neviniae*. Unpublished report prepared for Pilbara Iron Pty Ltd, August 2008.

Biota Environmental Sciences (2009) Cape Lambert Port B Development: Additional *Lerista neviniae* Assessment. Unpublished report prepared for Pilbara Iron Pty Ltd, November 2009.

Biota Environmental Sciences (2010) Targeted Survey of Coastal Dunes Between Karratha and Cossack for *Lerista neviniae*. Unpublished report prepared for Rio Tinto Iron Ore, August 2010.

Cogger, H.G. (1992) Reptiles and Amphibians of Australia. Reed Books, Chatswood.

Phoenix Environmental Sciences (2010) Terrestrial Vertebrate Fauna Survey for Anketell Point Rail Alignment and Port Projects. July. Final report prepared by Phoenix Environmental Sciences Pty Ltd for API

Pough, F.H., Preest, M.R. and Fusari, M.H. (1997) Prey-handling and the evolutionary ecology of sand-swimming lizards (*Lerista*: Scincidae). *Oecologia* 112: 351-361.

Qualls, C.P. and Shine, R. (1998) Costs of Reproduction in Conspecific Oviparous and Viviparous Lizards, *Lerista bougainvillii*. *Oikos* 82(3): 539-551.

Smith, L.A. and Adams, A. (2007) Revision of the *Lerista muelleri* species-group (Lacertilia: Scincidae) in Western Australia, with a redescription of *L. muelleri* (Fischer, 1881) and the description of nine new species. *Records of the Western Australian Museum* 23: 309-357.

Smyth, M. and Smith, M.J. (1974) Aspects of the Natural History of Three Australian Skinks, *Morethia boulengeri*, *Menetia greyii* and *Lerista bougainvillii*. *Journal of Herpetology* 8(4): 329-335.