

Risk Assessment

The following risk assessment determines the risk of **African Serval (*Leptailurus serval*)** to Tasmania using the Bomford model (2008) and proposes assigned threat categories and import classifications for the species.

Species:		Serval (<i>Leptailurus serval</i>)
Date of Assessment:	28 February 2013	
Factor	Score	
A1. Risk posed from individual escapees (0-2)	2	<p>December 9, 2001 Davie, FL: A 7-year-old boy was taken to the hospital for stitches after being attacked and bitten “bone-deep” on the neck by a 40-pound declawed African serval at a PepsiCo International picnic. The child was walking by when the unattended serval leaped on him and knocked him to the ground. Pangaea Productions now called Animal World which is owned by Corinne Oltz was hired to bring the serval and other animals to the event to be used for entertainment. http://bigcatrescue.org/children-killed-and-mauled-by-big-cats/</p> <p>June 28, 2000 Rensselaer, NY: A 4-year-old boy underwent plastic surgery for a bite to the neck and two puncture wounds to the face when he was attacked by a 40-pound African serval being taken for a walk. The man walking the cat received several stitches for bite wounds to the hand. http://bigcatrescue.org/children-killed-and-mauled-by-big-cats/</p>
A2. Risk to public safety from individual captive animals (0-2)	0	
Stage A. Risk posed by individual animals (risk that a captive or escape animal would harm people)	Public Safety Risk Score = A1 + A2 = 2	Public Safety Risk Ranking A ≥ 2, Highly Dangerous A = 1, Moderately Dangerous A = 0, Not Dangerous = 2, Highly Dangerous
B1. Climate match score (1-6)	3	<p>TAP has serious concerns about this score.</p> <p>8 Squares with a match 6 – 7 Concerns regarding lack of opportunity to establish in colder areas – likely to lead to lower climatch score. As the species can hybridise with domestic cats, they therefore have similar biology and consideration could be given to including the domestic cat climatch score to add /or combine with the serval. climate change also needs to be taken into account.</p> <p>This climate match score seems low especially given that they can occur in mountainous areas up to 3000m Note: 8 squares with match of 5</p> <p>Not comfortable with 0 score. All other areas</p>

		<p>where it occurs outside its natural range have similar sized or larger native feline with which it would need to compete. Australia does not. Can hybridise with domestic cats in captivity.</p> <p>I believe it should be considered an extreme risk given some uncertainty around the climatic match.</p>
B2. Exotic population established overseas score (0-4)	0	Literature search did not show any exotic populations of this species establishing outside natural range.
B3. Overseas range size score (0-2)	1	12.5 million km ²
B4. Taxonomic class score (0-1)	1	Mammal
Stage B. Likelihood of establishment (risk that a particular species will establish a wild population in Tasmania)	Establishment Risk Score = B1 + B2 + B3 + B4 = 5	Establishment Risk Ranking B = 11-13, Extreme B = 9-10, High B = 6-8, Moderate B ≤ 5, Low = Low
C1. Taxonomic group (0-4)	2	One issue not covered is risk of hybridisation with feral cats. While C1 allows for hybridisation in birds it makes no provision for this in mammals.
C2. Overseas range size (0-2)	1	12.5 million km ² mapping provided does not include historical populations in Algeria (inc Tunisia). However it is not possible for this unmapped distribution to increase range by the 17.5 million km ² required to increase overseas range score.
C3. Diet and feeding (0-3)	3	Not considered arboreal but a capable climber.
C4. Competition for native fauna for tree hollows (0-2)	2	Can use tree hollows (QLD risk assessment).
C5. Overseas environmental pest status (0-3)	0	Has not established wild populations outside natural range.
C6. Climate match to areas with susceptible native species or communities (0-5)	5	<p>Forty Spotted pardalote (<i>Pardalotus quadragintus</i>), Eastern barred bandicoot (<i>Perameles gunnii</i>), Tasmanian Bettong (<i>Bettongia gaimardi</i>), new holland mouse (<i>Pseudomys novaehollandiae</i>).</p> <p>Bettong and eastern barred bandicoot are not listed in Tasmania but are potentially at risk from this species. Overlaps with several listed species but difficult to predict if they are at risk. As the Serval particularly prefers areas near water and eats frogs, the threatened green and Gold (<i>Litoria raniformis</i>) and perons marsh frog (<i>Limnodynastes peroni</i>) may be at risk.</p>

C7. Overseas primary production (0-3)	2	Vaughan Smith 19/02/2013 indicated that there were local extinctions of the species in agricultural areas where they were persecuted to protect both lambs and poultry. The TAP noted research by Atickem et al. 2010, indicating servals were responsible for 9% of take of stock by predators in the Bale Mountains of Ethiopia, taken stock included sheep and goats,. Atickem, A., Williams, S., Bekele, A., and Thirgood, S. (2010), Livestock predation in the Bale Mountains, Ethiopia. in <i>African Journal of Ecology</i> Vol 48. Pp 1076-1082
C8. Climate match to susceptible primary production (0-5)	2	TCDS 27.2
C9. Spread disease (1-2)	2	Mammal
C10. Harm to property (0-3)	0	Unlikely to harm property
C11. Harm to people (0-5)	3	Injuries severe or fatal (potential to kill young children) but few people at risk.
Stage C. Consequence of Establishment (risk that an established population would cause harm)	Consequence Risk Score = sum of C1 to C11 = 22	Consequence Risk Ranking C > 19, Extreme C = 15-19, High C = 9-14, Moderate C < 9, Low = Extreme
ASSIGNED THREAT CATEGORY:	EXTREME SERIOUS MODERATE LOW EXTREME UNTIL PROVEN OTHERWISE	
PROPOSED IMPORT CLASSIFICATION:	PROHIBITED IMPORT RESTRICTED TO THOSE LICENCE HOLDERS APPROVED FOR KEEPING SERIOUS THREAT SPECIES IMPORT RESTRICTED TO THOSE LICENCE HOLDERS APPROVED FOR KEEPING MODERATE THREAT SPECIES IMPORT PERMITTED	

CALCULATING TOTAL COMMODITY DAMAGE SCORE

Column 1	Column 2	Column 3	Column 4	Column 5
Industry	Commodity Value Index (CVI)	Potential Commodity Impact Score (PCIS, 0-3)	Climate Match to Commodity Score (CMCS, 0-5)	Commodity Damage Score (CDS columns 2 x 3 x 4)
Cattle (includes dairy and beef)	11	N/A		
Timber (includes native and plantation forests)	10	N/A		
Aquaculture	6	N/A		
Sheep (includes wool and meat)	5	2	2	20
Vegetables	5	N/A		
Fruit (includes wine grapes)	5	N/A		
Poultry (including eggs)	1.5	2	2	6
Cereal grain (includes wheat, barley, sorghum etc)	1	N/A		
Other crops and horticulture (includes nuts and flowers)	1	N/A		
Pigs	1	N/A		
Bees (includes honey, beeswax, and pollination)	0.5	N/A		
Oilseeds (includes canola, sunflower etc)	0.5	N/A		
Grain legumes (includes soybeans)	0.3	N/A		
Other livestock (includes goats and deer)	0.3	2	2	1.2
Total Commodity Damage Score (TCDS)				27.2

APPENDIX B: ASSIGNING SPECIES TO THREAT CATEGORIES

A: Danger posed by individual animals (risk a captive or escaped individual would harm people)	B: Likelihood of establishment (risk that a particular species will establish a wild population in Tasmania)	C: Consequence of establishment (risk that an established population would cause harm)	Threat category	Implications for any proposed import into Tasmania
Highly, Moderately or Not Dangerous	Extreme	Extreme	Extreme	Prohibited
Highly, Moderately or Not Dangerous	Extreme	High		
Highly, Moderately or Not Dangerous	Extreme	Moderate		
Highly, Moderately or Not Dangerous	Extreme	Low		
Highly, Moderately or Not Dangerous	High	Extreme		
Highly, Moderately or Not Dangerous	High	High		
Highly, Moderately or Not Dangerous	Moderate	Extreme		
Highly, Moderately or Not Dangerous	High	Moderate	Serious	Import restricted to those licence holders approved for keeping serious threat species
Highly, Moderately or Not Dangerous	High	Low		
Highly, Moderately or Not Dangerous	Moderate	High		
Highly Dangerous	Moderate	Moderate		
Highly Dangerous	Moderate	Low		
Highly, Moderately or Not Dangerous	Low	High		
Highly Dangerous	Low	Moderate		
Highly Dangerous	Low	Low		
Moderately or Not Dangerous	Moderate	Moderate	Moderate	Import restricted to those licence holders approved for keeping moderate threat species
Moderately or Not Dangerous	Moderate	Low		
Moderately or Not Dangerous	Low	Moderate		
Moderately Dangerous	Low	Low		
Not Dangerous	Low	Low	Low	Import permitted
Unknown	Any value	Any value	Extreme until proven otherwise	Prohibited
Any Value	Unknown	Any value		
Any Value	Any value	Unknown		
Unassessed	Unassessed	Unassessed		