

Risk Assessment

The following risk assessment determines the risk of INDIAN STAR TORTOISE (*Geochelone elegans*) to Tasmania using the Bomford Model (2008) and proposes assigned threat categories and import classifications for the species.

Species:	INDIAN STAR TORTOISE (<i>Geochelone elegans</i>)	
Date of Assessment:	1/8/18	
Literature search type and date:	IUCN Redlist: http://www.iucnredlist.org/details/39430/0#sectionRange on 1/8/18 Kraus 2009 Database of introductions Supplied species profile	
Factor	Score	
A1. Risk posed from individual escapees (0-2)	0	All other animals posing a lower risk of harm to people (i.e. animals that will not make unprovoked attacks causing injury requiring medical attention, and which, even if cornered or handled, are unlikely to cause injury requiring hospitalisation) (A1 = 0).
A2. Risk to public safety from individual captive animals (0-2)	0	Nil or low risk (highly unlikely or not possible) (A2 = 0).
Stage A. Risk posed by individual animals (risk that a captive or escape animal would harm people)	Public Safety Risk Score = A1 + A2 = 0	Public Safety Risk Ranking A ≥ 2, Highly Dangerous A = 1, Moderately Dangerous A = 0, Not Dangerous = Not Dangerous
B1. Family random effect value	-1.3	Testudinidae
B2. Proportion of introduction events that led to species establishment (Prop.species value)	0.4	Herp database: 2 introductions (Malta and USA - Virginia) Species profile: - nil establishments outside of range
B3. S(Climature 6 value)	-1.88	
Stage B. Likelihood of establishment (risk that a particular species will establish a wild population in Tasmania)	Establishment Risk Score = $1 / (1 + \exp(0.80 - 2.90 (\text{Prop. species} - \text{S(Climature6)} - \text{Family Random Effect})))$ = $1 / (1 + \exp(0.8 - 2.9 * (\text{Prop. species} - \text{S(Climature6)} - (\text{Family Random Effect}))))$ = $1 / (1 + \exp(0.8 - 2.9 * (0.13) + 1.88 + 0.08))$ = 0.056	Establishment Risk Ranking B = ≥0.86, Extreme B = 0.40-0.85, High B = 0.17-0.39, Moderate B = ≤ 0.16, Low = LOW

C1. Taxonomic group (0-4)	0	Other group.
C2. Overseas range size (0-2)	0	Range <10 million km ² .
C3. Diet and feeding (0-3)	0	Not a mammal.
C4. Competition for native fauna for tree hollows (0-2)	0	Ground dwelling species.
C5. Overseas environmental pest status (0-3)	0	Never reported as an environmental pest in an country or region (C5 = 0)
C6. Climate match to areas with susceptible native species or communities (0-5)	1	Low potential for risk to native vegetation
C7. Overseas primary production (0-3)	0	No established populations nor pest issues within its range
C8. Climate match to susceptible primary production (0-5)	0	
C9. Spread disease (1-2)	1	All herp = 1
C10. Harm to property (0-3)	0	< \$100,000 (C10 = 0)
C11. Harm to people (0-5)	0	Negligible risk (C11 = 0).
Stage C. Quantitative Consequence Assessment	Consequence Risk Score = sum of C1 to C11 = 2	Consequence Risk Ranking C > 19, Extreme C = 15-19, High C = 9-14, Moderate C < 9, Low = LOW
Adverse impacts	Nil	
Close relatives with similar behavioural and ecological strategies that have had adverse impacts elsewhere	No – basic search completed	
Dietary generalists	Herbivorous/ Coprivore/ carrion	
Stir up sediments to increase turbidity in aquatic habitats	No – terrestrial species	
Occur in high densities in their native or introduced range	Solitary – (IUCN) This species naturally inhabits scrub forests, grasslands, and some coastal scrublands of arid and semi-arid regions throughout its wide range (Das 2002), but also commonly inhabits human-dominated landscapes (Choudhury <i>et al.</i> 2000; de Silva 2003). Frazier (in Das 1991) recorded estimated densities of 4-12.5 animals per hectare in Gujarat. Populations in Sri Lanka are also generally considered common, although the 1998 Sri Lankan CAMP Assessment noted the species as declining and rated it Vulnerable A2cd. Any populations in Pakistan appear to be extremely localized and small (Moll 1983, 1989)	

Have the potential to cause poisoning and/or physical injury	No
Harbour or transmit diseases or parasites that are present in Tasmania	Yes – Low potential
Have close relatives among Tasmania's endemic reptiles and amphibians	No
Are known to have spread rapidly following their release into new environments	No
Stage C. Qualitative Consequence Assessment	LOW
Stage C. Consequence of Establishment (risk that an established population would cause harm)	Quantitative Consequence: LOW Qualitative Consequence: LOW Highest Consequence Assessment: LOW
ASSIGNED THREAT CATEGORY:	LOW
PROPOSED IMPORT CLASSIFICATION:	Import restricted to those licence holders approved for keeping moderate threat species Applying the precautionary principle and in line with Tasmania's biosecurity policy position, risk management for disease traceability import will be provided for approved

Appendices

APPENDIX A: 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	N/A		
Vegetables	5	N/A		
Fruit (includes wine grapes)	5	N/A		
Poultry (including eggs)	1.5	1		

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	N/A		
Total Commodity Damage Score (TCDS)				

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	Extreme		
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		

