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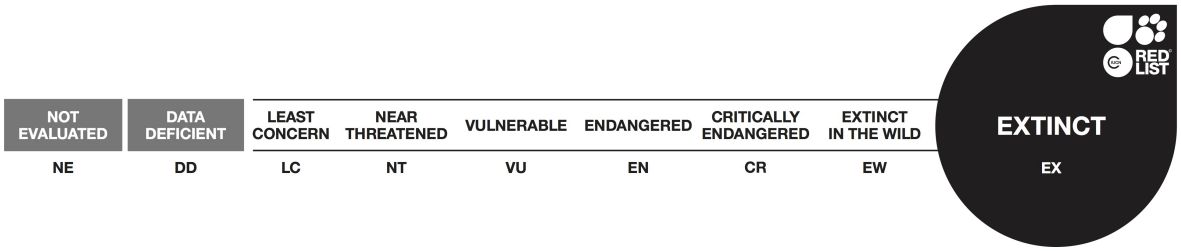
Labidura herculeana, St Helena Giant Earwig

Assessment by: Pryce, D. & White, L.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Arthropoda	Insecta	Dermaptera	Labiduridae

Taxon Name: *Labidura herculeana* (Fabricius, 1798)

Synonym(s):

- *Labidura loveridgei* Zeuner, 1962

Common Name(s):

- English: St Helena Giant Earwig, Saint Helena Earwig, St Helena Earwig

Taxonomic Notes:

Originally described as a full species, this taxon was downgraded to a subspecies of *L. riparia* by Kirby (1904). The taxon was reinstated as a valid species by Brindle (1970) and synonymised with *L. loveridgei* Zeuner, 1962 which had been described from subfossil forceps.

Assessment Information

Red List Category & Criteria: Extinct ver 3.1

Year Published: 2014

Date Assessed: August 22, 2014

Justification:

This is the world's largest known earwig, attaining a length of up to 80 mm. A total of 40 specimens were collected from the Horse Point area during the two Belgian expeditions from the Royal Museum for Central Africa in 1965-6 and 1967 (Brindle 1970). Live specimens were not found at any other sites at this time although they reported fragments of dead individuals from the south and east flanks of Flagstaff. There are a couple of unconfirmed records that the species was present after this time and it was thought to be declining. Two expeditions were conducted by Paul Pearce-Kelly from the London Zoo in 1988 and 1993, however, they failed to find any trace of the species. Recent intensive survey work in the 1990s and 2000s by Philip and Myrtle Ashmole failed to locate the species in this or nearby areas (Ashmole and Ashmole 2003). Howard Mendel from the Natural History Museum in London also failed to find it during a visit with the Ashmoles in 2005-6. The habitat at Horse Point has been degraded as far as this species is concerned since the time of the Belgian expeditions by the removal of nearly all surface stones, under which specimens were then found, for construction purposes. There has also been potential increased predator pressure from mice and rats, and probably also from invasive non-native predatory invertebrates including spiders and the centipede *Scolopendra morsitans* Linnaeus, 1758. The only possible evidence that this species may have persisted beyond the time of the Belgian expeditions has been the discovery of fragments of dead individuals. A sub-fossil forcep and ninth abdominal tergite was found with bird bones in 1995 near Prosperous Bay. Two further ninth abdominal tergites have been recovered since. The first was found under a discarded piece of equipment in the centre of Horse Point Plain in 2013; the second in a small area at the Millennium Forest in 2014 where some remaining

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surface rock is present. However, this second fragment was found in a concentration of invertebrate remains in the lair of a predatory spider. As all of these remains are fragmentary and the insect itself relatively robust with remains persisting potentially for many decades it has to be assumed that these specimens had been dead for a considerable time. The species is large, charismatic and of iconic status on the island; while there is still a slim possibility that it may still persist in some remote location, the balance of evidence points towards the species being extinct. The last confirmed adult sighting was in May 1967.

Previously Published Red List Assessments

1996 – Critically Endangered (CR)

1994 – Endangered (E)

1990 – Endangered (E)

1988 – Endangered (E)

1986 – Endangered (E)

1983 – Vulnerable (V)

Geographic Range

Range Description:

Labidura herculeana is endemic to the island of St Helena in the South Atlantic Ocean and its last known sites are restricted to the Eastern Arid Area. The only known site where live adults have been found is Horse Point Plain. Fragments have also been found at the lowest end of the Millennium Forest adjacent to Horse Point Plain and at a sub-fossil bird bone deposit in the hinterland behind Prosperous Bay and in the past on the south and east flanks of Flagstaff.

Country Occurrence:

Regionally extinct: Saint Helena, Ascension and Tristan da Cunha (Saint Helena (main island))

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Distribution Map

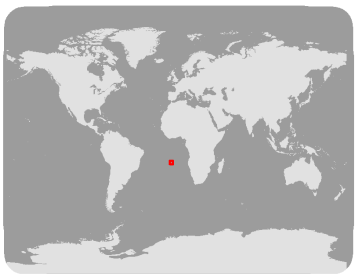
Labidura herculeana

NE DD LC NT VU EN CR EW **EX** EXTINCT

Range

Extinct

Compiled by:
St Helena National Trust



The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.

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Population

No live specimens have been found since 1967.

Current Population Trend: Unknown

Habitat and Ecology (see Appendix for additional information)

The species is xerophilus and nocturnal. At Horse Point the species was mostly found in burrows beneath stones with the adults appearing during the summer rains (December to February), seeking shelter again at the onset of drier weather (Brindle 1970). The burrows extended for a considerable distance and eventually become lost in fissures in the soil. When disturbed the adults tried to escape by running into these burrows. Mating was observed twice on 22/12/1965 and 1/2/1967 and a females with eggs were observed on 8/3/1967 and 24/3/1967. It is possible that in the past the species also inhabited bird colonies as indicated by its presence as a sub-fossil with bird bones.

Systems: Terrestrial

Threats (see Appendix for additional information)

There has been a general decline in habitat quality and an increase in the number of invasive non-native predators including rats, mice, spiders and the centipede *Scolopendra morsitans* Linnaeus, 1758. Habitat has also been altered in the past due to removal of surface stones for building.

Conservation Actions (see Appendix for additional information)

A watching brief should be maintained for this species.

Credits

Assessor(s): Pryce, D. & White, L.

Reviewer(s): Gerlach, J.

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Disclaimer

External Resources

For Images and External Links to Additional Information, please see the Red List website.

Appendix

Habitats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Habitat	Season	Suitability	Major Importance?
8. Desert -> 8.2. Desert - Temperate	Resident	Suitable	Yes

Threats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Threat	Timing	Scope	Severity	Impact Score
6. Human intrusions & disturbance -> 6.3. Work & other activities	Past, unlikely to return	Whole (>90%)	Rapid declines	Past impact
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.2. Species disturbance		
8. Invasive & other problematic species & genes -> 8.1. Invasive non-native/alien species -> 8.1.1. Unspecified species	Past, unlikely to return	Whole (>90%)	Unknown	Past impact
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
8. Invasive & other problematic species & genes -> 8.1. Invasive non-native/alien species -> 8.1.2. Named species	Past, unlikely to return	Whole (>90%)	Unknown	Past impact
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
8. Invasive & other problematic species & genes -> 8.1. Invasive non-native/alien species -> 8.1.2. Named species	Past, unlikely to return	Whole (>90%)	Unknown	Past impact
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
8. Invasive & other problematic species & genes -> 8.1. Invasive non-native/alien species -> 8.1.2. Named species (Scolopendra morsitans)	Past, unlikely to return	Whole (>90%)	Unknown	Past impact
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
8. Invasive & other problematic species & genes -> 8.1. Invasive non-native/alien species -> 8.1.2. Named species	Past, unlikely to return	Whole (>90%)	Unknown	Past impact
	Stresses:	2. Species Stresses -> 2.1. Species mortality		

Conservation Actions in Place

(http://www.iucnredlist.org/technical-documents/classification-schemes)

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Conservation Actions in Place
In-Place Research, Monitoring and Planning
Action Recovery plan: No
Systematic monitoring scheme: No
In-Place Land/Water Protection and Management
Conservation sites identified: Yes, over entire range
Occur in at least one PA: Yes
Percentage of population protected by PAs (0-100): 91-100
Area based regional management plan: Yes
Invasive species control or prevention: No
In-Place Species Management
Subject to ex-situ conservation: No
In-Place Education
Included in international legislation: No
Subject to any international management/trade controls: No

Research Needed

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Research Needed
0. Root -> 4. Other

Additional Data Fields

Distribution
Estimated area of occupancy (AOO) (km²): 8
Continuing decline in area of occupancy (AOO): Yes
Extreme fluctuations in area of occupancy (AOO): No
Estimated extent of occurrence (EOO) (km²): 8
Continuing decline in extent of occurrence (EOO): Yes
Extreme fluctuations in extent of occurrence (EOO): No
Number of Locations: 2
Extreme fluctuations in the number of locations: No
Lower elevation limit (m): 411

Distribution
Upper elevation limit (m): 413
Population
Continuing decline of mature individuals: Unknown
Population severely fragmented: Unknown
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: Yes
Movement patterns: Not a Migrant

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