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Onitis caffer

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Taxonomy [top]

Kingdom	Phylum	Class	Order	Family
ANIMALIA	ARTHROPODA	INSECTA	COLEOPTERA	SCARABAEIDAE

Scientific Name: Onitis caffer

Species Authority:	Boheman, 1857
Synonym(s):	Onitis nicanor LeConte 1861
Taxonomic Notes:	The genus *Onitis* Fabricius 1798 is widespread in the Afrotropical, Oriental and Palaearctic regions. It is divided into 20 species groups of which 13 groups and 130 species are represented in Africa (ScarabNet 2009). This species belongs to *Onitis* Group 7, which occupies a range in cooler regions found in the south and in tropical eastern highlands.

Assessment Information [top]

Red List Category & Criteria:	Least Concern ver 3.1
Year Published:	2013
Date Assessed:	2013-07-30
Assessor(s):	Davis, A.L.V.
Reviewer(s):	Böhm, M. & Gerlach, J.
Contributor(s):	Hall, D. & Monteiro, L.
Justification:	

Onitiscaffer has been assessed as Least Concern since it shows a large extent of occurrence, primarily within the borders of South Africa, where it faces no known threats, and often occurs in abundance in natural grassland, areas of farm pasture, and nature reserves.

Geographic Range [top]

Range Description:	This species was described from Caffraria, an inexact region often considered to be centred on the modern South African province of KwaZulu-Natal and the adjoining part of the Eastern Cape. It occupies a wide altitudinal range primarily restricted to the cooler parts of South Africa (Australian CSIRO 1970-1986, unpublished records), but with marginal distribution in the east of Botswana and possibly also in the extreme south of Mozambique. Its range encompasses both the winter and summer rainfall regions of South Africa. However, its occurrence in the winter rainfall region may result from past range expansion since, like other summer rainfall species in that region, it is mostly restricted to grassland pastures that have been created by the widespread clearance of natural shrubland (Davis 1993a). It is absent only from the hot northeast lowlands, the arid western Nama Karoo regions, and possibly the highest, coldest mountains of the country. Citations from Zimbabwe and Mozambique (Ferreira 1978, Schoolmeesters 2011) refer to *Onitis autumnalis* described as new by Davis (1986). *Onitis caffer*has been introduced into Australia for the biological control of dung and is established in parts of the southeast and southwest (Edwards 2007).
Countries:	Native: Botswana; Lesotho; South Africa Introduced: Australia
Range Map:	Click here to open the map viewer and explore range.

Population [top]

Population: During its season of activity, this species is recorded in relative abundance in cattle dung throughout the moister, cooler regions of South Africa (Australian CSIRO 1970-1986, unpublished records).

Population Trend: ? Unknown

Habitat and Ecology [top]

Habitat and Ecology: This moderately-sized, dusk-flying, tunnelling species shows no particular soil association having been trapped on cattle dung in fair numbers on both deep sand (total 35 individuals) and clay soils (total 18) near Tshwane / Pretoria in South Africa at the warmer limits of its range (Davis 1996). The same results showed conflicting vegetation trends on the different soil types with a strong bias to shaded thickets (total 29 individuals) as opposed to open woodland (total 5) or grassland (total 1) on deep sand and a bias to grassland on clay (total 12). Such flexibility may account for its wide distribution across the different climatic zones of South Africa where it shows great variation in seasonal activity (Australian CSIRO 1970-1986, unpublished records). Unlike most dung beetle species, in warmer northern parts of the summer rainfall region, it is active primarily during autumn at the beginning of the cool, dry season with first appearance at the end of February, peak activity in March / April, and cessation of activity in June / July. In the cooler highland regions to the south and east of the summer rainfall region, it appears as early as December or January (Davis *et al*. 2005) and although activity presumably ceases in the cold mid-winter, it may also show some limited activity in the warmer temperatures before the rains in spring as observed in early November in the eastern Free State. In pastures sited in lower-lying areas of the winter and bimodal (spring / autumn) rainfall regions in the southwest of South Africa, this species also commences activity in autumn at the beginning of the winter rainy season (March) and continues activity throughout winter until temperatures become too warm (November) after the end of the rains in the late spring (Davis 1993b). This species constructs dung sausages in clusters at the branched tips of its tunnel in which eggs are laid at intervals (Edwards 1986a). At 25^{o}C, development of the larvae to new adults takes 24.7 (winter rainfall individuals) or 29.4 weeks (summer rainfall individuals) without dormancy. At 20^{o}C, there are two different responses. Either 8.8 or 7.7 weeks are added to these development times without dormancy occurring (Edwards 1986b). Alternatively, 80% of winter rainfall and 30% of summer rainfall individuals undergo 47 weeks of dormancy at the third larval instar and emerge as adults, respectively, after 80.1 and 83.8 weeks. Development took 121.8 weeks at 15^{o}C with zero development predicted at 10.4 to 10.1^{o}C. These results compare favourably with the mean daily annual temperature range recorded at collection localities of this cool-adapted species.

This species is especially characteristic of open highland areas in Highveld grasslands (AT1009) and Drakensberg montane grasslands, woodlands and forests (AT1004) with representation in the southern part of the South Africa bushveld (AT0717) and higher altitude areas in the southeast of the Kalahari xeric savanna (AT1309) (ecoregions based

on Olson *et al*. 2001). It is also now characteristic of pastures within the south-western ecoregions of Lowland fynbos and renosterveld (AT1202), Montane fynbos and renosterveld (AT1203) and Albany thickets (AT1201). Occurrence is marginal in Maputaland ecoregions although one record from Ndumu Game Reserve on the southern Mozambique border would suggest its possible occurrence in the extreme south of that country.

Some environmental characteristics for 270 locality records are as follows: altitude: mean: 952 ± 596 (S.D.), range: 0-2,199 m; annual rainfall: mean: 592 ± 185 (S.D.), range: 166-1,047 mm; annual temperature: mean: 16.9 ± 1.9 (S.D.), range: 11.2-21.6 ^{o}C (max. + min. / 2).

Systems: Terrestrial

Use and Trade [top]

Use and Trade: There is no use or trade information available for this species.

Threats [top]

Major Threat (s): This species is unlikely to be seriously threatened at present. In the highlands of Mpumalanga, South Africa, it was been trapped with cattle dung in low numbers in both natural Highveld grassland and improved pastures of Kikuyu grass (Davis, unpublished data). However, these numbers were too low in order to assess if improvement of pastures is detrimental to this species. The effect of widespread conversion of highland grassland to commercial forest plantations was also not assessed for this species.

Conservation Actions [top]

Conservation Actions: There are no species-specific conservation measures in place for this species, and there is no action currently required for its conservation, as it is widespread across various regions and is often abundant in cattle dung on farms as well as being found in nature reserves (Australian CSIRO 1970-1986, unpublished records).

Citation: Davis, A.L.V. 2013. *Onitis caffer*. The IUCN Red List of Threatened Species. Version 2015.2. <www.iucnredlist.org>. Downloaded on **14 July 2015**.

ISSN 2307-8235