

Black-soil rises ctenotus

Ctenotus schevilli

Near Threatened (*Nature Conservation Act 1992*) | Ecological Sciences, Queensland Herbarium



Identification

A moderately large ctenotus (SVL 85mm) with a pattern dominated by pale spots. Ground colour olive brown, usually with pale red-brown on the sides. Dark spots occur along the mid dorsal line. These may join to form an irregular vertebral stripe. The remaining pattern consists of small pale spots, scattered over the dorsal surface. These dots tend to align vertically on the flanks. Top of head without pattern. Temples with pale spots. Limbs pale reddish brown, the hind limbs with obscure darker markings. Ventral surfaces white (Wilson and Knowles 1988, Wilson and Swan 2003, Wilson 2005).

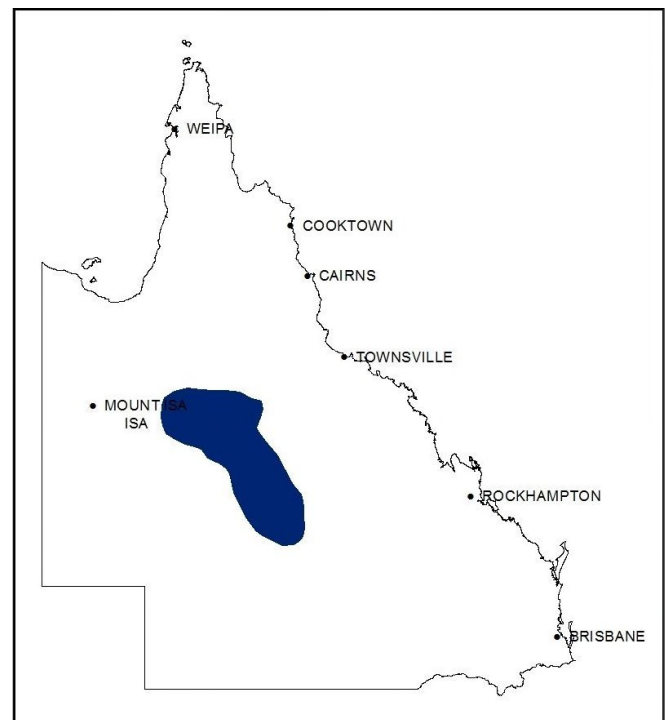
Ctenotus capricorni may be sympatric with at least four other species of ctenotus in the Mitchell Grass Downs (grassplains ctenotus *C. agrestis*, black-soil ctenotus *C. joanae*, gravelly-soil ctenotus *C. lateralis* and eastern barred wedgesnout ctenotus *C. strauchii*). While many ctenotus species can look superficially similar, its spotty appearance (small pale spots) and lack of dark markings separate it from other species in its habitat.

Distribution

Ctenotus schevilli is a Queensland endemic, being confined to the Mitchell Grass Downs in central Queensland. The distribution is restricted to an area around Richmond, Winton, Hughenden, Winton and Blackall. There are currently no records from protected lands.

Habitat

Ctenotus schevilli occurs in the semi-arid Mitchell Grass Downs. Its habitat is deeply cracking black soil plains vegetated with Mitchell grasses (*Astrebla* spp.) and occasionally occurs in adjacent ecotonal habitats (Czechura 1986; Wilson and Knowles 1988), particularly the junctions between fine soils and stony or rocky rises (Ehmann 1992).



The areas between stony rises with reddish soil and the lower-lying, deep-cracking grey clay soils (which appear black when wet); with open tussock grasslands with an overstorey of open shrubland or woodland may be present (Ehmann 1992). Preferred habitat is elevated sites with partially embedded rock strewn along crests (R. Valentic pers. comm. 2011).

Vanderduys (pers. comm. 2010) also notes the use of partially-embedded rocks as habitat; at one site “they were common in the area with a burrow under every stone bigger than about 30-40cm”. However, there are indications that the species is genuinely patchy in the landscape, as Vanderduys (pers. comm. 2011) observed that “I turned over a whole heap of similar rocks a few kilometres away but found no evidence of their burrows, which were very obvious at the spots I did get them”. Sometimes a burrow system is located beneath these rocks, or the skinks inhabit crack networks under the cover without any obvious sign of usage (R. Valentic pers. comm. 2011).

Records occur from Regional Ecosystems 4.9.1, 4.9.1a, 4.9.8, 4.9.8a, 4.9.8b (WildNet database 2013; Qld Herbarium 2013) 4.3.14 and 4.3.3 (E. Vanderduys pers. comm. 2014).

Seasonal and timing considerations

The species apparent ability to utilise deep soil cracks would affect its detectability and reporting rate, as this skink, like many other soil-crack specialists, would detect the observer and retreat deep into the soil cracks. Windows of opportunity to detect *C. schevilli* occur on cooler days or when there is sheet flooding inundation of lower lying areas and on warmer days at mid-morning before it heats up too much (R. Valentic pers. comm. 2011). Therefore, survey effort for this species should take this behaviour into account.

Ctenotus are known to be spring-summer breeders (James 1991); however most of the existing records of this species were taken between April and September (Wildnet database 2013).

Surveys should be carried out during cooler months (April to September) of the year, and are best conducted on dry days within the survey period.

Recommended survey approach

Active diurnal searches can achieve greater coverage within project areas and therefore should be the primary survey approach in targeted surveys for this species. If the active searching does not detect the species in suitable habitat, then the secondary methods (pitfall/funnel trapping) can be employed.

Active searching

Active searches can be conducted in a range of curly Mitchell grass *Astrelba lappacea* tussock grasslands, as well as the margins of these habitats. Before commencing active searching, scan the area using binoculars for active or basking individuals, as these skinks may quickly retreat into soil cracks. During searches, pay special attention to searching under rocks – particularly rocks larger than 30 cm diameter – for individuals and evidence of burrows. Under optimal conditions, searches are best conducted in the morning when individuals are likely to be basking and starting to become active. However keep in mind that the optimal time of day (and day within the survey period), to conduct active diurnal searches depends heavily on season and weather conditions on adjacent days.

Pitfall and funnel trapping

Pitfall arrays, in combination with drift fence and funnel traps, can be placed in suitable habitat, particularly in close proximity to where burrow systems have been identified under rocks. Funnel traps can also be used with or without drift fence near burrows.

Survey effort guide

There is no information available on detection rates for *C. schevilli*. However, the recommended level of effort below may provide a reasonable opportunity to detect *C. schevilli* if present in the project area. Pay particular attention to seasonal and timing considerations to increase detectability.

Minimum effort per 50 ha of suitable habitat during optimal conditions			
Survey technique	Effort per survey period	Effort per survey	Number of survey periods
Active diurnal searches (50 m x 50 m plot)	60 minutes searching per plot 4 plots per 50 ha (= 240 min per 50 ha) (or 1 plot per 5 ha if survey area is less than 50 ha)	Two 30 person-minute searches per plot	2 surveys
Funnel traps	1 plot per 50 ha (or 1 plot per 10 ha if survey area ≤ 50 ha) 24 funnel trap nights	4 nights	2 surveys
Pitfall traps	1 plot per 50 ha (or 1 plot per 10 ha if survey area ≤ 50 ha) 16 pitfall trap nights	4 nights	2 surveys

e.g. Active searches: 4 plots per 50 ha, with 2 searches of 30 person-minutes per survey site within the survey period. Trapping: 1 plot per 50 ha, with 4 pit traps and 6 funnel traps set for 4 consecutive nights per survey.

Ethical and handling considerations

Active searching

- During active searches, always replace habitat to the best of your ability, such as re-rolling rocks and logs back into place.
- If you are working in a fragile environment (e.g. sandstone escarpment) every attempt should be made to keep damage from actively searching to a minimum.
- Any captured animals should be released at the site of capture as soon as possible after identification.

Pitfall and funnel trapping

- Traps must be thoroughly checked early in the morning before temperatures become too hot. This also reduces the risk of predation by diurnal predators such as goannas.
- Shelter should always be provided to reduce predation and exposure (heat, cold and dehydration) of trapped animals. Place shelter in the bottom of buckets. For funnel traps, we recommend at least 70% shade-cloth however silver roof insulation or dense vegetation are alternatives.
- Sudden downpours pose a drowning risk; place floats in the bottom of buckets. Buckets must be closed if they begin to fill with water and should not be reopened until the drowning risk has passed.

- Ant predation can be a problem so locate pitfall traps away from obvious ant nests and be vigilant for ant activity. If ants are found attacking captured animals and cannot be controlled using low toxicity insecticides, traps should be closed immediately.
- Consider weed and pathogen spread when using equipment in multiple locations as soil, seeds and spores can be transported in and on buckets, funnels, pegs and drift fence.
- Exercise caution when checking traps as they may contain venomous animals; personnel should be trained to remove venomous snakes.

Acknowledgements

These guidelines were prepared by Melanie Venz in September 2014. Advice and comments on drafts for *Ctenotus schevilli* were provided by Eric Vanderduys and Alex Kutt.

Citation

Venz, M. 2014. Black-soil rises ctenotus, *Ctenotus schevilli*. Targeted species survey guidelines. Queensland Herbarium, Department of Environment and Science, Brisbane.

Key references

Czechura, G.V. Skinks of the *Ctenotus schevilli* group. *Memoirs of the Queensland Museum*. 22: 289-297.

Ehmann, H. (1992). 'Encyclopedia of Australian Animals Reptiles'. Collins Angus and Robertson, Pymble.

James, C. D. (1991). Annual variation in reproductive cycles of scincid lizards (*Ctenotus*) in central Australia. *Copeia*, 744-760.

Queensland Herbarium (2013) Regional Ecosystem Description Database (REDD). Version 7.0b - January 2013, Department of Science, Information Technology, Innovation and the Arts (DSITIA); Toowong, Queensland.

WildNet Database (2013). Oracle database of wildlife and reserve information managed by Department of Science, Information Technology, Innovation and the Arts (DSITIA).

Wilson, S. (2005). 'A Field Guide to Reptiles of Queensland'. Reed New Holland, Frenchs Forest.

Wilson, S. and Swan, G. (2003). 'A Complete Guide to the Reptiles of Australia'. Reed New Holland, Frenchs Forest.

Wilson, S. and Knowles, D. (1988). *Australia's Reptiles: A Photographic Reference to the Terrestrial Reptiles of Australia*. Collins Angus, & Robertson, Pymble.