

## **The spider *Periegops suteri* (Araneae: Periegopidae): description, ecology, localities and management recommendations**

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### **Introduction**

*Periegops suteri* (Urquhart, 1892) is restricted to Banks Peninsula and Riccarton Bush Reserve in Christchurch City and is one of only two described species in the distinctive Australasian monogeneric family Periegopidae. The other described species, *P. australia*, is restricted to a small area of southeastern Queensland (Forster 1995). The family Periegopidae is part of the Haplogynae (spiders with simple, ancestral genitalia) within the Araneomorphae (“true” spiders) and periegopids are considered to be the sister-group to the spitting spiders, Scytodidae (Coddington 2005). Female specimens of *Periegops* sp. have been found in the East Cape region of the North Island (Forster 1995) and the Alderman Islands, off the coast from the Coromandel Peninsula (Forster & Forster 1999, B.M. Fitzgerald, *personal communication*). It is likely that these North Island specimens represent a new species of *Periegops*, however this cannot be confirmed until male specimens are examined (Forster & Forster 1999).

A female specimen of *P. suteri* was first collected from “Dyers Pass, Banks Peninsula” by H. Suter on an unknown date and was described by Urquhart (1892). Forster (1995) listed eleven other specimens (four males, five females and two immature specimens) collected between 1915 and 1994. Specimens had been found at Omahu Bush (Rhodes Bush in Forster 1995), Kaituna Valley, Little River, Akaroa and Riccarton Bush. On 27 August 1996, Grace Hall (New Zealand Arthropod Collection, Auckland) and I found a female under a log at “Big Beech”, Hinewai Reserve, near Akaroa. I returned to Hinewai Reserve on 23 January 2000 with Dr Mark Harvey (Western Australian Museum, Perth) and we found a male, a female and two immature specimens.

### **Description**

Adult *P. suteri* are approximately 8 mm in body length. They have a reddish brown cephalothorax with black lines extending from the middle of the carapace to the eyes. The legs and abdomen are yellowish brown and there are usually six narrow black chevrons on the dorsal surface of the abdomen. *Periegops suteri* has six small eyes in



**Figure 1.** Female *Periegops suteri*.

three widely spaced pairs; one pair is anterior median on the carapace and the other pairs are anterior-lateral on either side of the carapace (Fig. 1).

### **Habitat and ecology**

Most *Periegops suteri* specimens have been found under logs and rocks, and in leaf litter, in both beech and podocarp forest. Adults have been found within thin silken tubes under logs (Forster 1995, *personal observation*), although they have reduced silk glands. In addition, both male and female specimens have been collected using pitfall traps (Forster 1995), which suggests that *P. suteri* only constructs a web for shelter, not prey capture, and is an active hunter. In Riccarton Bush, two adult males were discovered under a log with a single female; given the probable low population there, this implies that the female might possess some method of attracting males (Forster 1995), possibly pheromones (Forster & Forster 1999).

### **Threat status**

Forster (1995) stated that *P. suteri* should “be recognised and listed along with the world’s most endangered animals.” McGuinness (2001) listed *P. suteri* as an additional

invertebrate species of potential interest to conservation because it was only distantly related to overseas families. A recent review of the threat status of New Zealand's flora and fauna (Hitchmough 2002) has listed *P. suteri* as "Sparse", but this recommendation was based on little information.

### **Recent surveys**

Between 11 October 2002 and 19 May 2003, reserves on Banks Peninsula were searched for the presence of *P. suteri*. The Department of Conservation reserves searched were selected on the basis that they were known to have a good leaf litter layer. Hinewai Reserve and Riccarton Bush were also searched as *P. suteri* had been found there within the last 10 years. Table 1 shows which reserves were searched and whether *P. suteri* was found. Reserves were searched for up to two hours by log and rock turning in suitable habitat. Hay Scenic Reserve was visited twice as there had been flooding reported in the reserve after the first search (A.M. Evans, *personal communication*) and the sites where *P. suteri* were previously found were close to the stream.

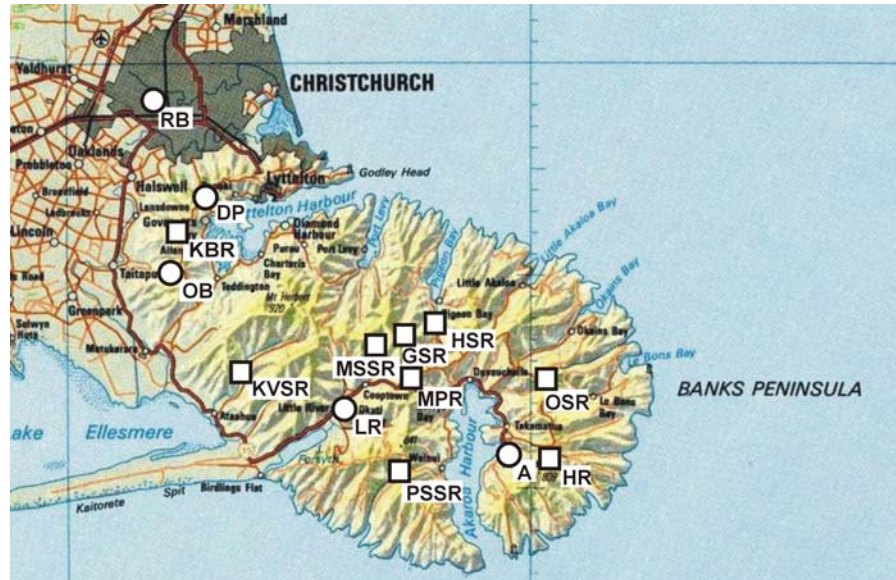
All *P. suteri* found (Table 1; Fig. 2) were in areas with a good litter layer over well-drained soil. The rocks and logs they were found under were all snugly fitted next to the soil and usually in more open ground within forest. The understorey in Armstrong Reserve was extensively damaged by fire in recent years (A.M. Evans, *personal communication*) and this might explain why no *P. suteri* were found there. Thick and often impenetrable bush prevented thorough searches of Mt Sinclair Scenic Reserve, Mt Fitzgerald Scenic Reserve and Mt Herbert Scenic Reserve and although no *P. suteri* were found, there was plenty of suitable habitat. The presence of two males and a female under the same rock at Peraki Saddle Scenic Reserve (where no other specimens were found) supports Forster's (1995) theory that females possess some method of attracting males. Despite thorough searching at Riccarton Bush, no *P. suteri* were found, although there is plenty of suitable habitat and they may well still be in Riccarton Bush.

### **Recommendations**

*Periegops suteri* appears to be restricted to mature forest with a deep leaf litter layer and well-drained soil. The limited dispersal potential of *P. suteri* and lack of continuous habitat make it highly likely that the remaining populations are isolated. Therefore, if a population is extirpated, there is no chance of *P. suteri* re-establishing naturally. It is recommended that the reserves listed above in which *P. suteri* is present, be managed to ensure that a deep leaf litter layer is maintained and plenty of logs and rocks are available for habitat. Of concern is Kaituna Valley Scenic Reserve, which regularly has much of the litter layer removed by flooding (A. Hutt, *personal communication*). The Kaituna River should be managed so that the reserve is not flooded regularly, which would allow *P. suteri* and other litter-dwelling invertebrates to maintain more stable populations.

**Table 1.** Reserves searched for *Periegops suteri*. Personnel: AE, Alison Evans; BG, Brenda Greene; CV, Cor J. Vink; JM, John Moore; MH, Marie Hudson; PC, Phil Crutchley.

Date	Reserve	Personnel	<i>P. suteri</i> specimens found and habitat	Locality of specimens
11.10.2002	Hinewai Reserve	AE, BG, CV, PC	1 ♂, 1 ♀ under logs, in leaf litter	43°48'36"S 173°01'17"E
11.10.2002	Hay Scenic Reserve	AE, BG, CV, PC	2 ♀, 5 immatures under logs, in leaf litter	43°42'10.49"S 172°53'51.94"E
24.1.2003	Kaituna Valley Scenic Reserve	AE, CV, MH	2 ♀ under logs, in leaf litter	43°44'31.02"S 172°41'17.10"E
13.3.2003	Hay Scenic Reserve	CV, MH	2 ♀ under logs, in leaf litter	43°42'10.49"S 172°53'51.94"E
13.3.2003	Otepatotu Scenic Reserve	CV, MH	1 immature under logs, in leaf litter	43°44'56.77"S 173°00'56.61"E
13.3.2003	Armstrong Reserve	CV, MH	none	
14.3.2002	Peraki Saddle Scenic Reserve	CV, MH	2 ♂, 1 ♀ under the same rock, in leaf litter	43°49'14.77"S 172°51'35.41"E
14.3.2002	Montgomery Park Scenic Reserve	CV, MH	1 ♂ under log, in leaf litter	43°44'45.34"S 172°52'13.26"E
27.3.2003	Glenralloch Scenic Reserve	CV, MH	1 ♂ under rock, in leaf litter	43°42'47.54"S 172°51'58.28"E
27.3.2003	Mt Sinclair Scenic Reserve	CV, MH	none	
27.3.2003	Mt Fitzgerald Scenic Reserve	CV, MH	none	
18.5.2002	Morice Settlement Scenic Reserve	CV, MH	1 ♀ under rock, in leaf litter	43°43'15.60"S 172°50'01.98"E
18.5.2002	Mt Herbert Scenic Reserve	CV, MH	none	
18.5.2002	Kennedys Bush Reserve	CV, MH	1 ♀, 3 immatures under rocks, in leaf litter	43°37'57.08"S 172°37'21.98"E
19.5.2002	Riccarton Bush	AE, CV, JM	none	



**Figure 2.** Localities where *P. suteri* have been found. Circles denote localities where specimens were found up to 10 years ago. Squares denote localities where specimens were found between 11 October 2002 and 19 May 2003. A = Akaroa (exact locality unknown); DP = Dyers Pass; GSR = Glenralloch Scenic Reserve; HR = Hinewai Reserve; HSR = Hay Scenic Reserve; KBR = Kennedy's Bush Reserve; KVSr = Kaituna Valley Scenic Reserve; LR = Little River (exact locality unknown); MPSR = Montgomery Park Scenic Reserve; MSSR = Morice Settlement Scenic Reserve; OB = Omahu Bush; OSR = Otepatotu Scenic Reserve; PSSR = Peraki Saddle Scenic Reserve; RB = Riccarton Bush.

It is unknown whether the other specimens of *Periegops* found at East Cape and the Alderman Islands are *P. suteri* or a new species of *Periegops* (Forster 1995; Forster & Forster 1999). The restricted distribution of *P. suteri* and *P. australia* and the limited dispersal potential of *Periegops* would suggest that the specimens from East Cape and the Alderman Islands are a new species, however this requires male specimens or molecular data for confirmation. Preliminary mitochondrial COI molecular evidence points to them being a distinct species (*unpublished data*). In the future, a search of suitable habitat around the sites where female specimens were found previously should be undertaken. It would be best to search in late spring or early autumn as this is when males were found on the Banks Peninsula. Hopefully, the collection and taxonomic examination of male specimens (and additional female specimens) would confirm

whether there is another species of *Periegops* present in New Zealand, or whether *P. suteri* is widespread but disjunct.

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