

Some observations on dragonflies (Insecta: Odonata) throughout New Zealand

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Introduction

Within the framework of a study of the coastal vegetation of New Zealand, some observations on dragonflies were made from November 1999 to April 2000. Though the observations are by no means comprehensive, the findings for some species contribute to national distributional records. The assessment of the current distribution of dragonflies is based on the works of Rowe (1987) and Moore (1989). In total, eight dragonfly species were observed at eight sites. The findings are briefly described and are related to the known distribution of dragonflies in New Zealand.

Material and Methods

Dragonflies were either caught by a net or observed with binoculars. Species identifications were made using Rowe's (1987) "The Dragonflies of New Zealand". All individuals were released after determination and photographic documentation. The locations investigated (Table 1), were widely spread throughout New Zealand.

Table 1. Locations investigated for dragonflies.

Location	Latitude	Longitude	District	Habitat
Taharoa Beach	35.8105	173.6620	Waikato WO	dune area, pasture
Otaki River Lagoon	40.7408	175.1031	Wellington WN	coastal lagoon
Flat Point	41.2487	175.9651	Wellington WA	dune area
Farewell Spit	40.5094	172.8715	Nelson NN	dune lake
Mahinapua Walkway	42.7951	170.9167	West Coast WD	swamp
Wakanui Beach	44.0306	171.8637	Canterbury MC	coastal lagoon
Lake Te Anau	45.4170	167.6990	Fiordland FD/SL	lake
Murray Beach	46.7888	168.0017	Stewart Island SI	dune area

Results

Eight species of dragonfly were observed across the locations investigated (Fig. 1).

SUBORDER ZYGOPTERA - DAMSELFLIES

Family Coenagrionidae

***Xanthocnemis zelandica* (McLACHLAN, 1873) - Common Redcoat Damselfly**

2MM, 2FF Otaki River Lagoon WN, 23 December 1999

5MM, 3FF Wakanui Beach MC, 21 January 2000

3 Mahinapua Walkway WD, 25 February 2000

None of the three collection localities are listed on the distribution map given in Rowe (1987) or in Moore (1989), but fit into the known distribution and underline the ubiquitous distribution of this species. *Xanthocnemis zelandica* often occurs together with *Austrolestes colenisonis*. Both species are more widely distributed than any other zygopteran species (Crumpton 1977). The waters at Wakanui Beach and Otaki River are coastal lagoons with brackish waters. The conductivity of the water in the Otaki River lagoon was about $640 \mu\text{S}/\text{cm}^{-1}$, which is equivalent to 0.5 ‰ and confirms the tolerance of *Xanthocnemis zelandica* to brackish conditions. This species is also reported from far saltier waters, such as Lake Ellesmere, where salinity varies from 20 - 56 ‰ that of sea water (Crumpton 1977).

2. *Ischnura aurora aurora* (BRAUER, 1865) - Gossamer Damselfly

1M Taharoa Beach WO, 03 April 2000

This species was first recorded by Tillyard (1926), but it was not until the 1940s that it was considered to be established in the North Island (Rowe 1987). *Ischnura aurora* is not present in the South Island. The location at Taharoa Beach was a small pond used as a watering hole by cattle and had a heavily trampled bank. The lake was approximately 400 m² and contained dense aquatic vegetation, favoured by *Ischnura* for breeding. This is a new locality record for the species

Family Lestidae

3. *Austrolestes colenisonis* (WHITE, 1846) - Blue Damselfly

4MM, 1F Wakanui Beach MC, 21 January 2000

2MM Mahinapua Walkway WD, 25 February 2000

3MM, 1F Farewell Spit NN, 27 March 2000

Two of the listed records are new for New Zealand. Of particular importance is the Mahinapua (West Coast) record as this closes a gap in distribution. Although larvae were not found, the lagoon at Wakanui Beach is most probably a breeding site, based on the presence of dense stands of rushes and sedges that seem to be necessary for *Austrolestes* (Rowe 1987). This indicates a tolerance of brackish conditions by this species.

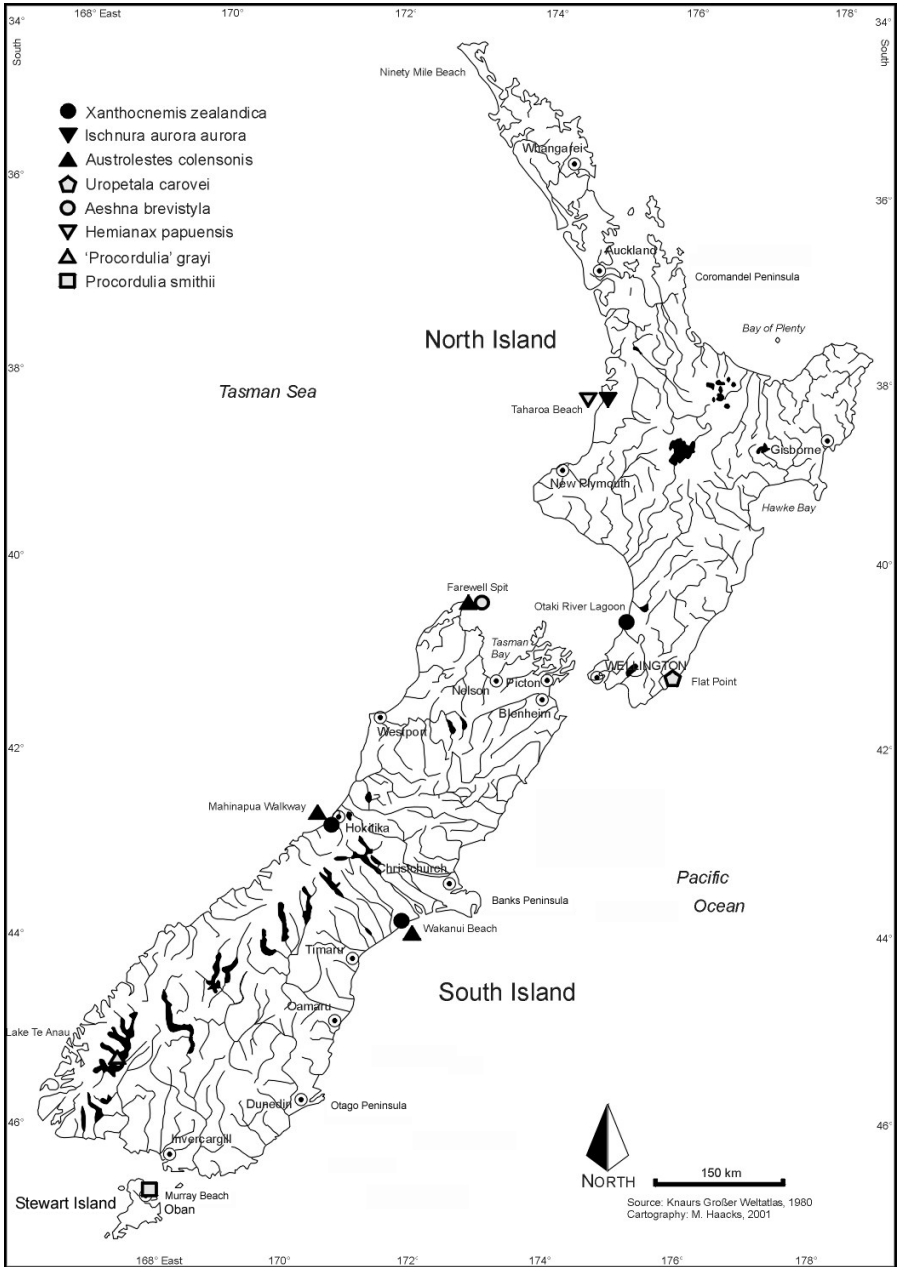


Figure 1. Distribution records of the observed dragonflies

SUBORDER ANISOPTERA - DRAGONFLIES

Family Petaluridae

4. *Uropetala carovei* (WHITE, 1846) - Bush Giant Dragonfly

1M Flat Point WA, 19 December 1999

Although this location is not mentioned in Rowe (1987), it cannot be ruled out as a breeding site, as there were many streams flowing from the hinterland to the sea. However, the male found was almost dead and may have drifted on the wind.

Family Aeshnidae

5. *Aeshna brevistyla* RAMBUR, 1842 - Lancer Dragonfly

1M Farewell Spit NN, 03 March 2000

This finding confirms the chain of dune lakes at Farewell Spit as a breeding site for this species. The dune lakes of the spit are densely vegetated with aquatic macrophytes and dense stands of raupo (*Typha orientalis*) at the margins. This also confirms the strong affinity of *Aeshna brevistyla* for coastal lakes as mentioned by Crumpton (1977) and Rowe (1987).

6. *Anax papuensis* (BURMEISTER, 1839) - Baron Dragonfly

1M, 2FF Taharoa Beach WO, 03 April 2000

This species reached New Zealand at the beginning of the last century and is found only in the North Island. *Anax* is considered to have become established in the 1950s (Armstrong & Corbet 1980). During the 1960s and 1970s the species was very common, but since 1976 the populations north of the central volcanic plateau have decreased. It is presumed that the illegal release of mosquito fish (*Gambusia affinis*) is responsible for the decrease (Rowe 1987). In recent times the populations seem to be increasing once again. The finding at Taharoa Beach is a new record. Although the dragonflies observed were hunting within the dune area, there were suitable larval habitats in close proximity. Rowe (pers. comm.) also observed *A. papuensis* in Auckland in January 2001.

The larvae of *A. papuensis* are diurnal (Rowe 1987), as are the larvae of the northern hemisphere congener, *A. ephippiger*. This is one reason why some authors have placed *A. ephippiger* and *A. papuensis* in a separate genus *Hemianax*, but morphologically this split is unjustified (Gentilini & Peters 1993).

Family Hemicorduliidae

7. *Procordulia grayi* (SELYS, 1871) - Yellow Spotted Dragonfly

2FF Lake Te Anau FD/SL, 20 March 2000

This species is known for its affinity with large lakes. The location at the control gates between the Waiau River and Lake Te Anau appears to be a new record, but fits perfectly with the widespread distribution of this species.

8. *Procordulia smithii* (WHITE, 1846) - Ranger Dragonfly

1M Murray Beach SI, 12 February 2000

The male found here belonged to the group whose abdominal markings are dark and dull. Although the species is known to be present on Stewart Island (Rowe 1987, Moore 1989), the finding at Murray Beach has not been previously recorded. Because the dragonfly was found within the dunes away from water, no confirmation about breeding sites can be made. However, Moore (1989) reported that *Procordulia smithii* occasionally occurs in slightly saline habitats.

References

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