

Groote Eylandt Bush Blitz

Odonata

Dragonflies & Damselflies

14–25 June 2021

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An Australasian Slimwing *Lathrecista asiatica* resting on a plant stem on North East Island. This species was only recorded twice during the Groote Eylandt Bush Blitz odonate survey (Photo J. Archibald)

Nomenclature and taxonomy used in this report is consistent with:

The Australian Faunal Directory (AFD)

<https://biodiversity.org.au/afd/home>

Contents

Contents.....	2
List of contributors.....	2
Abstract.....	3
1. Introduction.....	3
2. Methods	5
2.1 Site selection.....	5
2.2 Survey techniques.....	6
2.2.1 Methods used at standard survey sites	6
2.3 Identifying the collections	7
3. Results and Discussion	7
3.1 Un-named or not formalised taxa	7
3.2 Putative new species (new to science).....	7
3.3 Exotic and pest species.....	8
3.4 Threatened species.....	9
3.5 Range extensions	9
3.6 Genetic information	12
4. Information on species lists	12
5. Information for land managers	14
6. Other significant findings	15
7. Conclusions.....	15
Acknowledgements	15
References.....	16
Appendices	17
Appendix 1. List of Odonates recorded during the Groote Eylandt Bush Blitz.....	17

List of contributors

List of contributors to this report.			
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Abstract

An Odonata fauna survey was carried out on Groote Eylandt, within the Anindilyakwa Indigenous Protected Area, western Gulf of Carpentaria, over ten days in June 2021. This survey was part of the Bush Blitz program of biodiversity surveys across Australia. Eighteen sites were sampled encompassing a range of habitats. A total of 33 odonate species were recorded, comprising 22 dragonflies and 11 damselflies. As no previous dedicated surveys had been made in this area, these records establish a baseline list of Odonata for the island. Of these 33 species, eight had not been recorded on the island before, and another 17 were sampled for the first time on the island (observational records already existed for them). Many of these 25 new records comprised large range extensions or significant infill records. Four species had range extensions of approximately 400km recorded—none having been documented as being present in the eastern Top End before. Overall, Groote Eylandt appears to support a moderate diversity of odonate fauna but further surveys need to be conducted to ascertain what additional species are present on the island.



A shallow paperbark swamp at Site JA21-09. This swamp was ankle deep and nearly dried out when sampled. This was the only site surveyed that was inhabited by the Aurora Bluetail *Ischnura aurora* (Photo – J. Archibald)

1. Introduction

Odonates are a relatively well known order of diurnal carnivorous insects that are made up of two main groups. These are the dragonflies (Anisoptera) and the damselflies (Zygoptera). Dragonflies are generally larger, more robust, and most species hold their wings horizontally when at rest; damselflies are generally of a more delicate structure and hold their wings vertically above their bodies at rest. Both groups have aquatic nymphs in their life cycle, and

odonates are often used as bio-indicators in studies on global warming, conservation, climate change, land management, pollution of waterways, and biodiversity.

The Australian odonate fauna remains to be fully documented. Work continues on species discovery and description, mapping distributions, and recording unknown aspects of their biology.

The Anindilyakwa Indigenous Protected Area (IPA) covers approximately one million hectares of land and sea country across the Groote Eylandt Archipelago and is located in the western Gulf of Carpentaria. Groote Eylandt itself is Australia's fourth largest island and is situated 50km from the mainland. A low, highly dissected sandstone escarpment occupies much of its eastern side, and various habitats such as tropical open woodlands, coastal flood plains, swamps and mangrove forests are found across the island. Groote Eylandt continues to remain free of Cane Toads and other introduced vertebrate pests and is known as a stronghold for declining mammal species.

No surveys of Odonata have been carried out on Groote Eylandt in the past meaning there is no species baseline list and consequently conservation and land management plans cannot currently consider this fauna.

This report summarises the results of a ten day targeted survey of dragonflies and damselflies on Groote Eylandt in June 2021. It complements odonate data from previous Bush Blitz surveys across the Top End (Fish River Station, Wongalara Sanctuary, Judbarra National Park and Bradshaw Field Training Area), to create a baseline list upon which future scientific, Ranger and citizen science surveys can build.



During the day, Cave Duskhawkers *Gynacantha nourlangie* roost on the ceiling of rock overhangs and caves. This species was recorded at two adjacent sandstone outcrops near Angurugu (Photo – J. Archibald)

2. Methods

2.1 Site selection

Eighteen sites were sampled, including two Standard Survey Sites (SS1, SS2). The timing of the survey coincided with the end of an average Wet Season over the Top End of the Northern Territory. This meant that sampling occurred during what is normally a peak of odonate activity and abundance and this proved to be the case. Due to constraints of accessibility to most areas on Groote Eylandt (lack of roads, and some roads closed for cultural reasons), helicopters shared across a large biological survey team were used extensively to access most sites. Due to the difficulty of gaining access to Groote Eylandt and the lack of any previous sampling, sites were targeted primarily in the more remote and upland areas which could not be reached by vehicles, with lowland areas being accorded less sampling pressure. Odonata and Fishes were sampled by a combined team (along with Lepidoptera), with sites chosen to represent a range of aquatic habitats across the island. A summary of sampling sites is shown in Table 1.

Table 1. Odonata Sampling Sites, GDA94 datum

Site	Latitude	Longitude	Location	Date
JA21-01	-13.8566	136.43651	ALC Ranger Station, Pole 13, GE	14-24 June 2021
JA21-02	-13.98341	136.48137	Top Crossing, Angurugu River, GE	14-15 June 2021
JA21-03	-13.97230	136.50343	"The Cave Paintings" site	15 June 2021
JA21-04	-13.8949	136.4167	Cnr of Bougainvillea & Gray St, Alyangula,	15 June 2021
JA21-06	-14.02589	136.54871	Top of escarpment SE of Angurugu, GE	16 June 2021
JA21-08	-14.15535	136.42044	Mouth of Second Creek, S of Emerald River	17 June 2021
JA21-09	-13.98944	136.47568	1km SW of Top Crossing, Angurugu River	17 June 2021
JA21-10 & B	-14.10302	136.5842	Kings Crossing, 19km SW of Angurugu, GE	18 & 23 June 2021
JA21-12	-14.00959	136.64877	20km ESE of Angurugu, GE	19 June 2021
JA21-13	-14.09652	136.71021	30km ESE of Angurugu, GE	20 June 2021
JA21-14	-13.96042	136.63182	19km ENE of Angurugu, GE	21 June 2021
JA21-15	-13.85769	136.81213	Umbakumba, GE	21 June 2021
JA21-16	-13.63586	136.94499	North East Island, NE of Groote Eylandt	22 June 2021
JA21-17	-13.83433	136.41095	Small creek 2km NW of Alyangula, GE	23 June 2021
Market Garden	-13.98168	136.46657	Market Garden, Angurugu, GE	1-14 July 2021
Naked Pools	-13.96367	136.48601	Naked Pools, 3.5km NE of Angurugu, GE	21 June 2021
SS1	-13.98549	136.484	SE of Top Crossing, Angurugu River, GE	15 June 2021
SS2	-14.08263	136.4314	Mouth of Emerald River, GE	17 June 2021

2.2 Survey techniques

All sites comprised of an area of approximately 1.5 to 2 hectares. Odonates were collected using a standard 400mm internal diameter sweep net or were recorded using visual observations. Time per site varied, but as most sites were accessed by helicopter, search time was often dictated by helicopter scheduling. Typically, around two to three daylight hours were spent surveying at each site either in the late morning or early afternoon when odonates were most likely to be active. Specimens taken as vouchers were placed in glassine envelopes, fixed in acetone, dried, and stored in boxes containing naphthalene and silica gel to prevent insect attack and mould. They have now been lodged in the Museum and Art Gallery of the Northern Territory (MAGNT) entomological collection.

2.2.1 Methods used at standard survey sites

Standard Survey Sites 1 and 2 (SS1 & SS2) were sampled as per the standard method proscribed for these sites. For both sites on Groote Eylandt a two person team sampled for 30 minutes within each site with 400mm internal diameter sweep nets. All species of Odonata seen were recorded with some voucher specimens being collected and processed as outlined in 2.2 above.



A male Chalky Percher *Diplacodes trivialis*. This species was found at four sites on Groote Eylandt – three of the four being coastal environments (Photo – J. Archibald)

2.3 Identifying the collections

Vouchered specimens were sorted, identified (based primarily on Theischinger & Endersby (2009) and Theischinger & Hawking (2006)) and curated by Stephen Richards.

The specimen data was assembled in a FileMaker Pro database managed by the Natural Sciences Section at MAGNT and observational data manually added. A copy of this data will ultimately be accessed through the Atlas of Living Australia (ALA). The data has been recorded to the level of species. Specimens that were not recorded to species level (i.e. where there was uncertainty in identification due to damage) were excluded.

3. Results and Discussion

Thirty three species of Odonata were recorded on Groote Eylandt. Appendix 1 lists all Odonata recorded during the Groote Eylandt Bush Blitz. Collections made during this Bush Blitz will result in 104 specimens being added to public collections and 128 records added to publicly accessible databases. This survey has produced a baseline list of taxa for the island.

3.1 Un-named or not formalised taxa

No un-named or not-formalised odonate taxa were found on Groote Eylandt.

3.2 Putative new species (new to science)

No putative new odonate species were found on Groote Eylandt.



Rosy Skimmers *Orthetrum migratum* were recorded at five sites across Groote Eylandt. All were shallow streams flowing through rapids (Photo – J. Archibald)

3.3 Exotic and pest species

No exotic or pest species of Odonata were found on Groote Eylandt.

However, during field work two species of invasive weeds were noted – see Table 2. Both Mission Grass and Hyptis are common weeds found across the Top End of the Northern Territory, and are considered Class B weeds under the NT Weeds Management Act 2001. Both species were observed along the verge of a number of roads and tracks near Angurugu. Neither of these species are likely to cause high impacts on odonate communities although their control should be prioritised so they do not spread across the island, thus altering the relative pristine habitats that abound on Groote Eylandt.

Table 2. Exotic and pest species recorded on Groote Eylandt

Exotic/pest species	Location sighted/observed	Indication of abundance	Comments
<i>Cenchrus polystachios</i> Mission Grass	On verges of roads around Angurugu township - mostly on first few km of access road to the south of the island	Only noted in thick monotypic stands on road verges.	Class B Weed – to be controlled under the Act.
<i>Hyptis suaveolens</i> Hyptis	Noted in dried stands at Site JA21-09.	Not seen elsewhere on the island.	Class B Weed – to be controlled under the Act.



Prime riparian habitat surrounding a permanent pool at the base of a dissected sandstone escarpment. These sites are crucial breeding and refugia habitats for many species of Odonata (Photo J. Archibald)

3.4 Threatened species

No Odonata species found on Groote Eylandt are currently listed as threatened under any of the state, national or international lists of threatened species schedules. These schedules include the Territory Parks and Wildlife Conservation Act, the EPBC Act - List of Threatened Fauna, and the IUCN Red List of Threatened Species.

3.5 Range extensions

Of the 33 species of odonates sampled during the survey, 18 species were recorded as range extensions and six were recorded as significant infill records (Table 3). All 33 species had voucher specimens collected apart from one species, *Crocothemis nigrifrons*, that was recorded visually only.

No dedicated Odonata survey had been conducted on Groote Eylandt before this Bush Blitz however various incidental specimens had been collected from the island since the 1920s, and also from neighbouring sites along the south and west Gulf of Carpentaria coast. These historic records, although useful, give only a fragmentary glimpse of the odonate diversity found on Groote Eylandt. Human observational records (both by sight and imagery) have been made over the past two decades and uploaded to various public databases. These records are useful to a point, but it must be stressed that voucher specimens are imperative for documenting verifiable records. Observational records complement verifiable voucher specimens but cannot replace them in scientific value. Due to this survey, the presence of many odonate species can now be confirmed with captured specimens, with visual and photographic records on public databases supplementing these vouchers.

Of the eighteen range extensions recorded, ten were for dragonflies and eight for damselflies. The majority of these range extensions span from 180 to 250km in distance, and extend from north, east and south existing records on the Gulf of Carpentaria coast, inland, or the Gove Peninsula.

The most notable range extensions were that of *Pseudagrion lucifer*, *Nannophlebia eludens*, *Nannophlebia mudginberri* and *Anax gibbosulus*. The first three species had their ranges extended 400–450km to Groote Eylandt from known sites in western Arnhem Land/Kakadu in the western Top End, thus making them true Top End odonates. The fourth species also had its range extended by around 400km, but from Elsey, a locality in the southern Top End. Kakadu and areas along the Stuart Highway have been well surveyed for odonates over time, contrasting dramatically with poor or non-existent surveying throughout the interior of Arnhem Land. More studies need to be carried out to accurately identify the range of these odonate species across northern Australia.

Of the six significant range infills recorded, four were for dragonflies and two for damselflies. Groote Eylandt is located in the western Gulf of Carpentaria and centrally between the Gove Peninsula (northeast Arnhem Land) and the southwestern Gulf town of Borroloola. Five of the six significant infill records are very similar in that they fill the distribution gap of around 400km between these two distant localities.

The sixth infill record requires some explanation. The damselfly *Austroagrion watsoni* was found at two separate sites on Groote Eylandt with the closest existing records spanning from the East Alligator River (~450km to the WNW) and inside the Queensland border (~480km to the SSE). Initially, this would seem to be a massive range infill. However, there are only four extant records of this species in the Top End, and ten in the Kimberley of northwest Western Australia. There are only two extant records of this species in western Queensland, with the majority of records (over 2000) located on the eastern Australian coast. It would seem that this species is rare west of the Great Dividing Range, or there is the possibility that the other NT and WA records are erroneous. Further work is needed to determine the full range of this species.

Table 3. Range extensions or significant infill records for odonate species sampled

Species	Location sighted/observed	Distance from nearest known record (km)	Comments
<i>Nososticta fraterna</i> Northern Threadtail	JA21-14	~200km N of Batten Creek, SW Gulf of Carpentaria	Range extension
<i>Agriocnemis pygmaea</i> Pygmy Wisp	JA21-06	~200km N of Batten Creek, SW Gulf of Carpentaria	Range extension
<i>Argiocnemis rubescens</i> Red-tipped Shadefly	JA21-17	~200km N of Batten Creek, SW Gulf of Carpentaria	Range extension
<i>Austroagrion exclamationis</i> Northern Billabongfly	JA21-02	~200km S of Yirrkala, NT; ~200km N of Bing Bong Road, NT	Range infill
<i>Austroagrion watsoni</i> Eastern Billabongfly	JA21-02 JA21-10B	~450km ESE of East Alligator River, NT; ~480km NNW of Qld Border, Qld	Range infill
<i>Ceriagrion aeruginosum</i> Redtail	JA21-17	~200km S of Yirrkala, NT	Range extension
<i>Ischnura aurora</i> Aurora Bluetail	JA21-09	~200km ENE of Roper River, NT	Range extension
<i>Ischnura heterosticta</i> Common Bluetail	JA21-02 JA21-06	~220km N of Borroloola, NT	Range extension
<i>Pseudagrion lucifer</i> Citrine-headed Riverdamselfly	JA21-02 JA21-10B	~450km ESE of Jim Jim Lagoon, NT	Range extension
<i>Pseudagrion microcephalum</i> Blue Riverdamselfly	JA21-02 / JA21-10 Market Garden	~200km N of Batten Creek, SW Gulf of Carpentaria	Range extension
<i>Anax gibbosulus</i> Green Emperor	JA21-01 JA21-10B Market Garden	~400km ENE of Elsey National Park, NT	Range extension
<i>Anax papuensis</i> Australian Emperor	Market Garden	~200km ENE of Roper River, NT	Range extension
<i>Gynacantha noarlangie</i> Cave Duskhawker	JA21-03	~250km NNE of Caranbirini Waterhole, NT	Range extension
<i>Hemicordulia intermedia</i> Yellow-spotted Emerald	Market Garden	~200km ENE of Roper River, NT	Range extension
<i>Aethriamanta circumsignata</i> Square-spot Basker	JA21-02	~250km N of Cattle Creek, NT	Range extension
<i>Crocothemis nigrifrons</i> Black-headed Skimmer	JA21-06	~200km N of Batten Creek, SW Gulf of Carpentaria	Range extension (visual record only)

<i>Diplacodes haematodes</i> Scarlet Percher	JA21-06 / JA21-10 JA21-10B / SS1 JA21-14 / JA21-15 Naked Pools	~200km ENE of Roper River, NT	Range extension
<i>Nannophlebia eludens</i> Elusive Archtail	JA21-02	~400km ESE of Radon Springs, NT	Range extension
<i>Nannophlebia mudginberri</i> Top End Archtail	JA21-12	~400km ESE of Oenpelli, NT	Range extension
<i>Orthetrum caledonicum</i> Blue Skimmer	JA21-06 / JA21-15	~200km ENE of Roper River, NT; ~200km S of Yirrkala, NT	Range infill
<i>Orthetrum migratum</i> Rosy Skimmer	JA21-02 / JA21-06 JA21-10B JA21-12 / JA21-13	~200km N of Amelia Springs, NT; ~200km S of Yirrkala, NT	Range infill
<i>Orthetrum sabina</i> Slender Skimmer	JA21-02 / JA21-13 JA21-17 Market Garden	~200km S of Yirrkala, NT	Range extension
<i>Rhyothemis graphiptera</i> Graphic Flutterer	JA21-06	~200km ENE of Roper River, NT; ~200km S of Yirrkala, NT	Range infill
<i>Tholymis tillarga</i> Twister	JA21-13 / JA21-17 SS2	~250km ESE of Elcho Island, NT; ~250km NNE of Caranbirini Waterhole, NT	Range infill
<i>Tramea loewii</i> Common Glider	JA21-02 / JA21-06 JA21-10B / SS2 JA21-12 / JA21-13 JA21-14 / JA21-17	~180km N of West Island, Sir Edward Pellew Group, NT	Range extension



Success! Arlee McMahon successfully capturing a tiny damselfly with heteroptera sampling equipment on the edge of a drying paperbark swamp at Site JA21-09 (Photo – J. Archibald)

3.6 Genetic information

No genetic sampling of any Odonata species was undertaken during the Groote Eylandt Bush Blitz, however voucher specimens are suitable and available for tissue subsampling in the future.

4. Information on species lists

A total of 128 records (104 specimens and 24 observations) were made during this survey, representing 33 species of Odonata (22 dragonflies and 11 damselflies). Of these 33 species, voucher specimens were obtained for 32; the other record being a visual observation. Sampling was carried out in excellent conditions for odonate fauna with all drainage systems still flowing and fresh clean water still available in ephemeral creek lines and pools in the escarpment. Due to these conditions, it is felt that a representative survey of the odonate fauna of Groote Eylandt was achieved.

However, as no previous surveys of Odonata have been carried out on this island, this survey can only be considered the first baseline study of Odonata taxa for Groote Eylandt. Results of a review of ALA human observation records, and communications with Dave Webb (a Groote odonate enthusiast/citizen scientist), ascertained that there are at least ten extra odonate species extant on the island that were not recorded on this survey. Also, three additional species of dragonfly and two damselfly were observed during the survey by one of the authors, but could not be identified to species.



This specimen of a Common Glider *Tramea loewii* captured at Site JA21-06 was infested with red mites (Photo – J. Archibald)

Further surveys need to be undertaken on Groote Eylandt during different seasons, and in differing habitats to gain a comprehensive record of the odonate fauna of this island. This is especially true of the lakes and wetlands in the southeast of the island that were unable to be sampled during the survey.

It is interesting to note that for the eight species of odonate collected that had existing specimens lodged in public collections, five of them were represented by a single specimen (or sometimes 2–3) collected by Norman Tindale in 1921–22. These specimens are now a century old and represent the earliest known scientific collection of odonates on Groote Eylandt, and underline the importance of voucher specimens held in collecting institutions. The Bush Blitz specimens will be equally as important and valuable as studies of odonates on this island continue.

The relative abundance of the odonate fauna on Groote Eylandt during the survey can also be outlined. The most abundant species was the dragonfly *Nannodiplax rubra*. It was recorded at thirteen of the eighteen sites surveyed and as most sites were near fresh flowing streams (its preferred habitat) this was not an unexpected result. Nine species (six dragonflies and three damselflies) were only recorded from a single site with a single specimen. The richest survey site in terms of species diversity was JA21-02—Top Crossing on the Angurugu River—with a total of twelve species recorded. The sites with the lowest species diversity with only one species being recorded were JA21-01, JA21-03, JA21-12, and SS1.

Standard Survey Sites 1 and 2 (SS1 and SS2) were located in quite different habitats. SS1 was situated in open tropical woodland with a shrubby understorey. At the time of sampling the understory *Acacia* shrubs were in flower, and there was little in the way of grasses present. SS2 was located near a beach at the mouth of the Emerald River. It included some mangrove forest, and a vegetated grassy dune areas with Beach Hibiscus and some eucalypts present. One species of dragonfly *Diplacodes haematodes* was recorded at SS1. This site had no standing or running water and so was an unlikely odonate habitat. Four species of dragonfly were recorded at SS2. These were *Tholymis tillarga*, *Diplacodes trivialis*, *Tramea loewii* and *Neurothemis stigmatizans*. Although there was no freshwater present, the first three species listed were also sampled or observed at other coastal sites on the island so their presence at SS2 was likely. The fourth species is known for inhabiting grassy areas away from water sources so its presence was not unexpected.



Two Rangers at a creek on top of the escarpment at Site JA21-06 (Photo – J. Archibald)

5. Information for land managers

Groote Eylandt is a large, habitat-diverse region that is a substantial protected area for a wide range of ecosystems.

In relation to the Odonata fauna of this area, the major recommendation for land managers would be the control of two major factors that cause habitat degradation and destruction; weeds and fire.

Although there was evidence of weeds in some urbanised or disturbed areas, weeds were conspicuous by their absence on Groote Eylandt. This is no doubt due to the strict Quarantine and Biosecurity controls that have been in place on the island for many years to keep out unwanted animal and plant species. As mentioned in 3.3, two species of Class B weeds were noted at a few sites. Wind, vehicles, and animals (seeds caught in their fur) are the main vectors for these weeds. Controlling weeds by physically removing them and using herbicides, careful control of vehicle and human movements through known weed areas, and constant monitoring will control and hopefully eradicate these infestations.

Some habitats, such as riparian areas and monsoon vine thickets surrounding permanent springs (e.g. JA21-06 & JA21-13), are fire sensitive as well as being important odonate habitats. Identifying and protecting a patchwork/mosaic of key refugia in the landscape from hot fires would be beneficial. One location visited by helicopter on the escarpment (JA21-12) was a vegetated gorge that exhibited evidence that a massively hot fire had burnt through the site the year before. Huge paperbarks had been killed or badly damaged, and much of the riparian habitat had been badly affected by fire. There had been deep erosion of earthen banks during the Wet Season as the vegetation that normally consolidated it had been ravaged by the fire. This would be a very difficult area for fire control and the authors only point it out to make the land managers aware of what was seen.

Odonates represent an ideal portal to improved understanding of aquatic biodiversity and waterway health, being an active and visual part of habitats and landscapes (country). Sampling techniques, identification and biology could form a component of activities including school education programs, ranger survey capacity building, and two-way learning to document language names and traditional ecological knowledge



The striking Graphical Flutterer *Rhyothemis graphiptera* was only recorded once on Groote Eylandt (Photo – J. Archibald)

6. Other significant findings

All significant findings have been recorded in earlier chapters of this report.

7. Conclusions

Groote Eylandt supports a moderate diversity of Odonata that are characteristic of the tropical woodland, riparian, and escarpment communities of northern Australia. Further surveys at other times of year, as well as in differing habitats are likely to identify additional species on the property. This Bush Blitz survey provided an opportunity to survey a relatively un-sampled region of the Northern Territory for odonate fauna resulting in a significant baseline list that will be built on in the future.

Acknowledgements

We thank the Traditional Owners of the Anindilyakwa Indigenous Protected Area, and especially of Groote Eylandt, for permitting us to conduct our surveys on their land. We recognise their ongoing cultural connection to land and sea country, and pay our respects to Elders past, present and emerging. We thank the Anindilyakwa Land Council for allowing us to conduct our survey. A huge thankyou to Anindilyakwa Land and Sea Ranger Coordinator Katie Oxenham and all the Rangers without whose help, knowledge, and enthusiasm would have made this Bush Blitz impossible. The field assistance and enthusiasm of teachers participating in TeachLive was a highlight of the fieldwork. Another huge thankyou goes to the Bush Blitz team for their help and support, to the helicopter pilots for their professional skills, and Robbie and Jo our amazing bush chefs. Special thanks also to Dave Webb whose enthusiasm for dragonflies and damselflies, both their capture digitally and as specimens, has no limits. Last but not least, a special thank you goes to Suzanne Horner for her unfailing patience, much needed support in IT matters, and the electronic analysis of data.



A male Aurora Bluetail *Ischnura aurora* – the smallest damselfly recorded on Groote Eylandt
(Photo – J. Archibald)

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Mouth of a creek that flowed from the escarpment and emptied directly into the ocean through a sand bank, meaning there was no saltwater intrusion - Site JA21-13 (Photo – J. Archibald)

Appendices

Appendix 1. List of Odonata recorded during the Groote Eylandt Bush Blitz

Number of taxa: 33 (including subspecies and varieties but without double counting).

Family	Species	Common name	Putative new species	Threatened (EPBC Act)	Threatened (State/Territory Act)	Exotic/ pest
Platycnemididae	<i>Nososticta fraterna</i>	Northern Threadtail	No	No	No	No
Coenagrionidae	<i>Aciagrion fragilis</i>	Blue Slim	No	No	No	No
Coenagrionidae	<i>Agriocnemis pygmaea</i>	Pygmy Wisp	No	No	No	No
Coenagrionidae	<i>Argiocnemis rubescens</i>	Red-tipped Shadefly	No	No	No	No
Coenagrionidae	<i>Austroagrion exclamationis</i>	Northern Billabongfly	No	No	No	No
Coenagrionidae	<i>Austroagrion watsoni</i>	Eastern Billabongfly	No	No	No	No
Coenagrionidae	<i>Ceriagrion aeruginosum</i>	Redtail	No	No	No	No
Coenagrionidae	<i>Ischnura aurora</i>	Aurora Bluetail	No	No	No	No
Coenagrionidae	<i>Ischnura heterosticta</i>	Common Bluetail	No	No	No	No
Coenagrionidae	<i>Pseudagrion lucifer</i>	Citrine-headed Riverdamselfly	No	No	No	No
Coenagrionidae	<i>Pseudagrion microcephalum</i>	Blue Riverdamselfly	No	No	No	No
Aeshnidae	<i>Anax gibbosulus</i>	Green Emperor	No	No	No	No
Aeshnidae	<i>Anax papuensis</i>	Australian Emperor	No	No	No	No
Aeshnidae	<i>Gynacantha noarlangie</i>	Cave Duskhawker	No	No	No	No
Corduliidae	<i>Hemicordulia intermedia</i>	Yellow-spotted Emerald	No	No	No	No
Libellulidae	<i>Aethriamanta circumsignata</i>	Square-spot Basker	No	No	No	No
Libellulidae	<i>Agronoptera insignis allogenae</i>	Red Swampdragon	No	No	No	No
Libellulidae	<i>Crocothemis nigrifrons</i>	Black-headed Skimmer	No	No	No	No

Libellulidae	<i>Diplacodes bipunctata</i>	Wandering Glider	No	No	No	No
Libellulidae	<i>Diplacodes haematodes</i>	Scarlet Percher	No	No	No	No
Libellulidae	<i>Diplacodes trivialis</i>	Chalky Percher	No	No	No	No
Libellulidae	<i>Lathrecista asiatica</i>	Australasian Slimwing	No	No	No	No
Libellulidae	<i>Nannodiplax rubra</i>	Pygmy Percher	No	No	No	No
Libellulidae	<i>Nannophlebia eludens</i>	Elusive Archtail	No	No	No	No
Libellulidae	<i>Nannophlebia mudginberri</i>	Top End Archtail	No	No	No	No
Libellulidae	<i>Neurothemis stigmatizans</i>	Painted Grasshawk	No	No	No	No
Libellulidae	<i>Orthetrum caledonicum</i>	Blue Skimmer	No	No	No	No
Libellulidae	<i>Orthetrum migratum</i>	Rosy Skimmer	No	No	No	No
Libellulidae	<i>Orthetrum sabina</i>	Slender Skimmer	No	No	No	No
Libellulidae	<i>Pantala flavescens</i>	Wandering Glider	No	No	No	No
Libellulidae	<i>Rhyothemis graphiptera</i>	Graphic Flutterer	No	No	No	No
Libellulidae	<i>Tholymis tillarga</i>	Twister	No	No	No	No
Libellulidae	<i>Tramea loewii</i>	Common Glider	No	No	No	No