

## TASMANIAN MUSEUM AND ART GALLERY'S EXPEDITION OF DISCOVERY II – THE FLORA AND FAUNA OF MUSSELROE WIND FARM, CAPE PORTLAND, NORTHEAST TASMANIA

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(with one text-figure, nine plates, two tables and one appendix)

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Flora and fauna surveys were conducted at the Musselroe Wind Farm property in 2018 and 2019 as part of the Tasmanian Museum and Art Gallery's ongoing research, collection-building and nature-discovery program. The property was found to have significant ecological and nature conservation values and this survey program increases the number of vouchered taxa known for the area to 1336 primarily from the targeted groups of vascular plants, bryophytes, lichens, butterflies, moths, beetles, freshwater invertebrates, snails and slugs. Many threatened taxa were recorded and several of the taxa, chiefly lichens and invertebrates, are new to science or new records for Tasmania. This survey significantly expands our knowledge of the flora and fauna of the Cape Portland area and serves as a baseline for a property with a mix of farming and environmental conservation management.

**Key Words:** Species discovery, biodiversity, multidisciplinary survey, Cape Portland, wind farm, threatened species.

### INTRODUCTION

The Tasmanian Museum and Art Gallery's (TMAG) expedition to the Musselroe Wind Farm was the second in a series of multidisciplinary biological surveys conducted by the museum under the banner of its Expeditions of Discovery. The aims and rationale for the surveys, as discussed by Baker *et al.* (2019), are to: build TMAG's collections of flora and fauna from under- and poorly sampled parts of Tasmania; document the species of plants and animals present; discover new or hitherto overlooked species; and highlight the role that baseline species-discovery research plays in understanding and managing Tasmania's biota. The first expedition, conducted at the *Wind Song* property at Little Swanport in 2017, recorded 885 taxa, including several new to science or new records for Tasmania (McCarthy & Kantvilas 2018, Baker *et al.* 2019, Elix *et al.* 2019, Elix & Kantvilas 2020).

The Musselroe Wind Farm was chosen as it contains a diverse range of habitats, it has a limited number of vouchered collections held in museums and herbaria, and the project had the enthusiastic support of the land managers, Woolnorth Wind Farm Holding Pty Ltd. The survey focused on vascular plants, bryophytes, lichens, butterflies, moths, beetles, freshwater invertebrates, snails and slugs, with other taxonomic groups recorded opportunistically. Here we present an inventory and discussion of the plants, lichens and animals identified and offer an insight into a biodiverse corner of Tasmania. These results serve as a benchmark for future studies in

other parts of Tasmania and to guide natural resource management on the property.

### MATERIALS AND METHODS

#### The property

The Musselroe Wind Farm is situated in Tasmania's far northeast (fig. 1), approximately 20 km north of Gladstone. It is a mixed-use enterprise, managed primarily to produce renewable energy via 56 wind turbines, and with a secondary use of cattle grazing. The property covers about 5500 ha and is bordered by approximately 30 km of reserved coastline. A large proportion has been cleared for grazing and converted into improved pasture, and this area is also the footprint for most of the wind farm. The Cape Portland Wildlife Sanctuary (CPWS) (844 ha), a private reserve managed by the Musselroe Wind Farm, is located on the western side of the property. The location of the property relative to adjacent reserved areas is shown in figure 1.

The property has a diverse range of natural wetlands, six of which are listed in the Directory of Important Wetlands for supporting native plant or animal taxa or communities considered threatened at the national level (Environment Australia 2001). The survey area is dominated by low rounded hills formed from Jurassic dolerite interspersed with poorly drained flats of Quaternary sands of aeolian, marine and lacustrine origin (Jennings & Sutherland 1969). There are scattered Cenozoic basalt flows in the

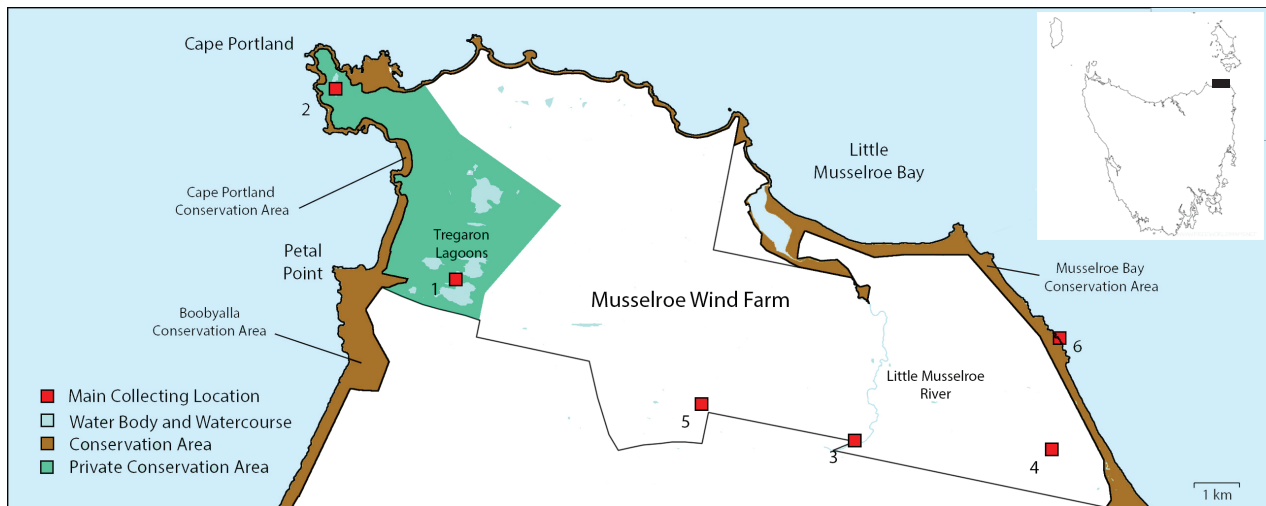


FIGURE 1 – Location of Musselroe Wind Farm: showing main collecting locations and reserve boundaries. 1: Tregaron Lagoons; 2: The Salties; 3: The Bullseye; 4: The Prairie; 5: Xanthorrhoea Ridge; 6: Abalone Rocks.

western half, as well as small exposures of the Cape Portland Complex, a Cretaceous intrusive porphyry, mostly west of Cape Portland Road. A small outcrop of Triassic sandstone is exposed just west of the original homestead. The easternmost extremity of the property is underlain by Devonian granite (McClenaghan 2005), which is exposed at the coast.

The climate of northeastern Tasmania corresponds to the Köppen classification of Cfb (temperate, warm summer, without dry season (Peel *et al.* 2007)). The nearest Tasmanian mainland weather station to Cape Portland is at Irapuna/Eddystone Point, where average temperatures fluctuate from 6.9–13°C in winter to 13.9–21.1°C in summer. Modelling by LandTasmania, following methods prescribed in Webb *et al.* (2015), suggests average minimum temperatures of 4.5–6.5°C for July and 12.1–12.9°C for January, with average maximum temperatures of 13.1–13.5°C in July and 21.5–22.5°C in January (LIST 2020). Rainfall has a distinct peak during the winter months and is lowest during January and February, with an annual average of 754 mm (BOM 2020). Although there is a closer weather station at nearby Swan Island, its temperatures are strongly influenced by its small island location, and less likely to accurately reflect those at the study site.

Most of the Cape Portland property is farmland or land previously cleared for agriculture and now managed for conservation. The western two-thirds of the property (west of the Little Musselroe River) is improved pasture actively managed for cattle grazing. In comparison, the eastern third of the property consists of a mosaic of unimproved pasture, formerly managed for grazing but now managed for conservation as it supports areas of native vegetation. Significant areas of native *Poa* grassland occur in the area north of Tregaron Lagoons, between Charmouth Hill and Cape Portland. Native saline-tolerant vegetation is widespread in the Tregaron Lagoons area, along the northern coastal fringe south of Lanoma Point and along the shores of the Little Musselroe estuary.

A large area of coastal heathland containing a significant proportion of shrub and scrubland with a closed canopy occupies the eastern third of the property, in a triangle bounded approximately by the coast to the northeast, the Little Musselroe River and estuary to the west, and the southern boundary. Small but significant areas of *Melaleuca ericifolia* swamp forest occur along the course of the Little Musselroe River and at Tregaron Lagoons, while patches of *Allocasuarina verticillata* forest occupy higher well-drained ground along dune tops and ridges.

Over a period of about five years to 2018, substantial infestations of the declared weed species Gorse *Ulex europaeus* and African Boxthorn *Lycium ferocissimum* were controlled using Australian Government funding through NRM North. The works were undertaken in areas of high-priority native vegetation where livestock have been excluded. These sites continue to be managed for conservation. The farmland areas are maintained according to a weed management plan with weed infestations of Gorse, Horehound *Marrubium vulgare* and various species of thistle managed to minimise their spread into high conservation areas.

The area has been visited by biologists numerous times, particularly to undertake surveys prior to the establishment of the wind farm. Whilst extensive in their coverage, the results of those studies are not publicly available and have generated relatively few herbarium/museum voucher specimens which add value to data included in platforms such as the *Australasian Virtual Herbarium* AVH or *Atlas of Living Australia* ALA. Prior to this survey only 220 vascular plant taxa and about 165 animal taxa were formally listed for the area (ALA 2020, AVH 2020).

### Expertise and timing

The survey involved four botanists and four zoologists from TMAG staff, as well as two honorary zoologist researchers. The property was surveyed during 5–9 November 2018, with follow-up invertebrate sampling and trap-sample

collection on 16 December 2018 and 16 January 2019, and additional flora, lichen and invertebrate sampling from 9–11 September 2019.

### Sampling methods

Sampling was based on a strategic selection of survey sites that represented the major vegetation types and was confined mostly to de-stocked and regenerating areas (fig. 1). The major survey sites were allocated a local name for ease of identification (table 1) and each site was surveyed in detail to cover relevant habitats for target taxa.

Specimens of vascular plants, bryophytes and lichens were collected and lodged in the Tasmanian Herbarium, with limited duplicates distributed to other herbaria nationally and internationally under TMAG's formal specimen exchange program. Several vascular plant taxa were recorded only by observation due to sampling difficulties (e.g., tall eucalypt trees) or lack of fertile material. All possible substrata for lichen and bryophytes, including rocks, soil, bark, wood and charcoal, were examined.

Moths were collected mainly by ultraviolet light-traps. White sheets and bucket traps were used, but some were also collected from malaise traps set for general insect sampling. Beetles, other insects and other arthropods were sampled through a mix of direct observation, hand collection, including the use of hand nets and a beating tray, and trapping using malaise traps and yellow pan traps. These taxonomic groups were also collected from light-traps set for sampling moths. Molluscs were recorded through hand-searching and collection. Other invertebrates and vertebrates were recorded incidentally. Specimens were lodged in the TMAG Zoology collections, with some mollusc specimens retained by specialists until identifications were completed.

Information from all survey material curated and accessioned into the TMAG collection will be made available on the *Australasian Virtual Herbarium* and/or the *Atlas of Living Australia*.

### Specimen identification

Specimens were identified utilising standard equipment and techniques, with comparison to TMAG's reference collections when necessary. Lichens were identified in the

laboratory using low-power and high-power microscopy of hand-cut sections of the thallus (vegetative tissue) and apothecia (reproductive structures), mounted in water, 10% KOH, 50% HNO<sub>3</sub>, lactophenol cotton blue, ammoniacal erythrosin and Lugol's iodine. Routine chemical analyses using thin-layer chromatography followed standard methods (Orange *et al.* 2010). Some moth specimens were identified using the reference collections of the Australian National Insect Collection (ANIC) (CSIRO, Canberra) and the Biosecurity Tasmania Insect Collection at the New Town Research Laboratories of the Department of Primary Industries, Parks, Water and Environment.

### Nomenclature and distribution

Vascular plant nomenclature follows de Salas and Baker (2021) and common names follow Wapstra *et al.* (2005). Nomenclature for mosses and liverworts is in accordance with the *Australian Moss Name Index* (ABRS 2018a), the *Checklist of Australian Liverworts and Hornworts* (McCarthy 2006) and *Tropicos* (Tropicos.org, 2018). Lichen nomenclature mainly follows McCarthy (2020). Nomenclature for land snails follows Stanisic *et al.* (2017). For all other vertebrate and invertebrate taxa identified to species, nomenclature follows the *Australian Faunal Directory* (ABRS 2018b).

Undescribed, partially identified or new species of insect are annotated with a unique epithet based on the registration number of an exemplar specimen from the TMAG collections, such as '*Euryglossa* sp. TMAG\_F96120'. In cases where specimens can be associated with previously collected material, existing epithets are adopted. Insect specimens that could only be identified to a higher taxonomic rank than species are annotated with 'unplaced'. Moth distributions and rarity were determined, in part, by referring to specimens in ANIC.

## RESULTS

### Diversity

A total of 1417 taxa was recorded (table 2). This comprises 244 vascular plants, plus a further 119 collected in the past but not recorded in this survey (appendix 1.1); 33 mosses and seven liverworts (appendix 1.2); 206 lichens (appendix 1.3); and 735 invertebrates (714 insects, 5 spiders, 4 crustaceans and 12 gastropod molluscs) (appendix 1.4). In addition, five species of reptile, six species of mammal and 62 species of bird were observed or their presence detected (appendix 1.5).

Vegetation types observed were largely consistent with TASVEG 4.0 mapping (DPIPWE 2020). Smaller-scale unmapped features of interest include a dune, vegetated with an almost-perfect monoculture of Southern Grasstree *Xanthorrhoea australis* at Xanthorrhoea Ridge, and unmapped areas of *Melaleuca ericifolia* swamp forest along the western margin of the Musselroe Bay estuary. Skeletal sandy soils on granitic outcrops at the far eastern end of the property supported a heathland community distinct from other heathland areas. For vascular plants, the most species-

TABLE 1 — Main collecting sites at Musselroe Wind Farm

Site	Latitude	Longitude
Tregaron Lagoons	40°46'19"S	147°58'24"N
The Salties, Cape Portland	40°44'43"S	147°56'35"N
The Bullseye, Little Musselroe River	40°48'12"S	148°03'28"N
The Prairie	40°48'31"S	148°06'21"N
Xanthorrhoea Ridge	40°46'19"S	148°00'58"N
Abalone Rocks	40°47'14"S	148°06'01"N



diverse sites were The Salties (57 taxa) (pl. 1), The Bullseye (40 taxa) (pl. 2) and Abalone Rocks (31 taxa) (pl. 3), with the main families represented being the Asteraceae (35 taxa), Poaceae (32 taxa), Fabaceae (29 taxa) and Cyperaceae (25 taxa). A low-rainfall bryophyte flora is dominated by mosses over liverworts, with the best-represented families being the Pottiaceae (9 species) and Bryaceae (5 species), both adapted to dry conditions. The most species-diverse sites for bryophytes are The Salties, with all 15 taxa recorded growing on soil and Abalone Rocks, where four epiphytes were found in dense shrubbery behind the beach and nine on rocks or soil. The property supports a diverse array of lowland, coastal, low-rainfall lichens, including many novelties (see below). The richest habitats for lichens are coastal rocks, with granite and dolerite supporting subtly different species assemblages; dry woodlands dominated by *Allocasuarina verticillata*, where lichens colonise wood, bark, rocks and consolidated soil; isolated large granite outcrops in scrubby heathland; and *Melaleuca ericifolia*-dominated swampy woodland, where the papery bark of the oldest trees supports a highly specialised suite of epiphytes (see below). Artificial habitats, including fence posts, treated pine rails and mortar, are also well-colonised.

The sites with the highest diversity in insect taxa lie in the eastern heathlands at The Prairie (181 taxa) (pl. 4); the Tregaron

Lagoons environs (172 taxa) (pl. 5); and the landward portion of the Cape Portland headland beyond the enclosed paddocks (141 taxa). The most taxon-rich insect groups were the beetles (with 265 taxa), flies (147 taxa) then moths (136 taxa). A high diversity of moths was found in The Bullseye lagoon area, including several rare species and new records (see below). A number of characteristic or noteworthy invertebrates found during this survey are illustrated in plate 6 and plate 7.

## Novelties

### Flora

Botanical novelties were limited to the lichens and mosses. Twenty lichen taxa were recorded for Tasmania for the first time and are reported elsewhere (Kantvilas *et al.* 2020). These include: *Lecanora strobilina* and *Ramonia absconsa*, first records for the Southern Hemisphere, with the latter previously known only from the type collection from South Carolina; *Arthothelium endoaurantiacum*, *Collema crispum* and *Gyalecta pellucida*, first records for Australia; and *Austroparmelina corrugativa*, *Amandinea conranensis*, *Bacidia laurocerasi*, *Buellia extenuatella*, *Catinaria atropurpurea*, *Diploschistes euganeus*, *D. gyrophoricus*, *Endocarpon crassisporum*, *Lecanora pseudogangaleoides* subsp. *pseudogangaleoides*, *Opegrapha niveoatra*, *O. spodopolia*,



PLATE 1 – Succulent saline herbfield at The Salties (Cape Portland), dominated by *Sarcocornia blackiana* and *S. quinqueflora*.



PLATE 2 – The Bullseye, a freshwater lagoon flanked by *Melaleuca ericifolia* on the Little Musselroe River.



*O. varia*, *Physcia austrostellaris*, *Trapelia concentrica* and *Xanthoparmelia xerica*, all known previously from mainland Australia, with the last-mentioned otherwise known only from its type collection from South Australia. Whilst some of these novelties were recorded only during the survey, most were found to be already represented by unidentified existing herbarium specimens from other Tasmanian localities.

Taxonomic work will continue on some as yet unidentified collections. The unidentified species of *Ramboldia* and *Trapelia* may well be new to science.

Several mosses represent significant range extensions in Tasmania, including *Brachymenium preissianum*, recorded from exposed lime mortar at the ruins of an old homestead at Home Beach within the CPWS, and previously known

PLATE 3 – Granite outcrops on the east coast of the property. These support a rich lichen flora with the reddish *Caloplaca gallowayi* often dominant.



PLATE 4 – Coastal heathland at The Prairie. The sparsely vegetated area in the foreground provides habitat for the threatened plant species *Stylidium beaugleholei*.



PLATE 5 – Lagoon habitat of the aquatic plant species *Myriophyllum muelleri* and *Stuckenia pectinata* in the southern part of the Tregaron Lagoons.



only from Hobart, and *Campylium polygamum*, previously reported only from Chimney Pot Hill (near Hobart) and Lake St Clair, and found on boggy ground at The Bullseye. The Australian endemic moss, *Archidium stellatum*, a species of dry areas, and previously reported for South Australia and Victoria, is a new record for Tasmania, recorded

TABLE 2 — Overview of taxa recorded from Musselroe Wind Farm and surrounding coastal reserves

Group	Total taxa	Introduced species
Vascular Plants	363	65
Dicotyledons	238	43
Magnoliids	3	
Gymnosperms	0	
Monocotyledons	116	22
Pteridophytes	6	
Bryophytes	40	1
Liverworts	7	
Mosses	33	1
Lichens	206	
Invertebrates – Lepidoptera	137	1
Invertebrates – Coleoptera	251	6
Invertebrates – Other Insects	326	1
Archaeognatha	1	
Blattodea	4	
Dermaptera	3	
Diptera	133	
Hemiptera	73	
Hymenoptera	89	1
Mantodea	2	
Mecoptera	1	
Neuroptera	4	
Odonata	1	
Orthoptera	15	
Invertebrates – Other Arthropods	9	
Araneae	5	
Amphipoda	2	
Decapoda	1	
Isopoda	1	
Invertebrates – Gastropoda	12	4
Vertebrates	73	6
Birds	62	5
Mammals	6	1
Reptiles	5	0
Total	1417	84

from exposed soil in windswept tussock sedgeland with outcropping dolerite at The Salties near Cape Portland.

#### Fauna

Many invertebrate specimens remain unidentified or only partially identified (e.g., to family or genus level) and upon further research may well prove to be undescribed species or species newly recorded from Tasmania: these species are annotated with a '+' in appendix 1.4. Seven taxa are new to science: the fly *Axinia* sp. TMAG\_F5984 and the beetle *Idiophyes* sp. TMAG\_F98611 (both from the Tregaron Lagoons area); the moths *Limnaecia* sp. TMAG\_F107740 (found at The Prairie) (pl. 7D), *Batrachedra* sp. TMAG\_F99720, *Edosa* sp. TMAG\_F99719 and *Peraglyphis* sp. TMAG\_F99734 (all from The Bullseye lagoon area); and the snail *Scelidoropa* sp. 'Little Musselroe' (also from The Bullseye lagoon area). Four species were previously known only from the Australian mainland and are newly recorded for Tasmania: the beetle *Liparochrus* (not yet assigned to species) (Cape Portland headland trackway and Little Musselroe River crossing), and the moths *Scythrophanes stenoptera* (The Bullseye lagoon area), *Thalarcha phalarota* (Xanthorrhoea Ridge), and *Taxeotis intermixtaria* (eastern heathlands). Significant rediscoveries in a Tasmanian context include the fly *Acridophagus paganus* (pl. 7B; found in the eastern heathlands and on Xanthorrhoea Ridge) and the moths *Eutorna intonsa* (found at the Little Musselroe River crossing), *Araeostoma ANIC* sp. 01 (Cape Portland trackway and eastern heathlands), *Philenora* sp. TMAG\_F108002 (The Bullseye lagoon area), *Paramsacta marginata* (The Prairie and Little Musselroe River crossing) (pl. 7C), *Barea atmophora* and *B. exarcha* (both The Bullseye lagoon area), and *Bida radiosella* (eastern heathlands). Two further significant rediscoveries are also threatened species and are discussed further below.

#### Threatened species

##### Flora

The Musselroe Wind Farm is known for supporting populations of threatened species, some of which, for example *Thelymitra antennifera*, have been monitored by the Tasmanian Department of Primary Industries, Water and Environment. In the present survey 12 vascular plant species listed as rare and two species listed as vulnerable under Tasmania's *Threatened Species Protection Act 1995* were recorded (appendix 1.1). Scarlet Sundew *Drosera glanduligera* (rare) is a new record for the area and was found growing in the southeasternmost corner of the property on poorly drained, moss-covered granite rock plates in shrubby heathland (pl. 8A) and in open heathland at Xanthorrhoea Ridge. Neither population is within reserves on the property. The parasitic herb Golden Dodder *Cuscuta tasmanica* (rare) was observed as large populations at two wetlands within the CPWS (pl. 8B), parasitising a range of species including Running Marshflower *Ornduffia reniformis*, Creeping Buttons *Leptinella reptans* and Prickfoot *Eryngium vesiculosum*. Roundleaf Wilsonsia *Wilsonia rotundifolia* (rare) (pl. 8C) was recorded at Tregaron Lagoons as a common component of





PLATE 6 – A. The Darkling-beetle *Hyocis bakewelli*. B. The Belid Weevil *Stenobelus tibialis* on coastal *Juncus kraussii*. C. Salt-lake Slater *Haloniscus searlei*, a scyphacid isopod of saline lagoons listed as Endangered in Tasmania (photographed specimen is from Tunbridge Lagoon). D. The largely dune-dwelling Peacock-spider *Maratus tasmanicus*.

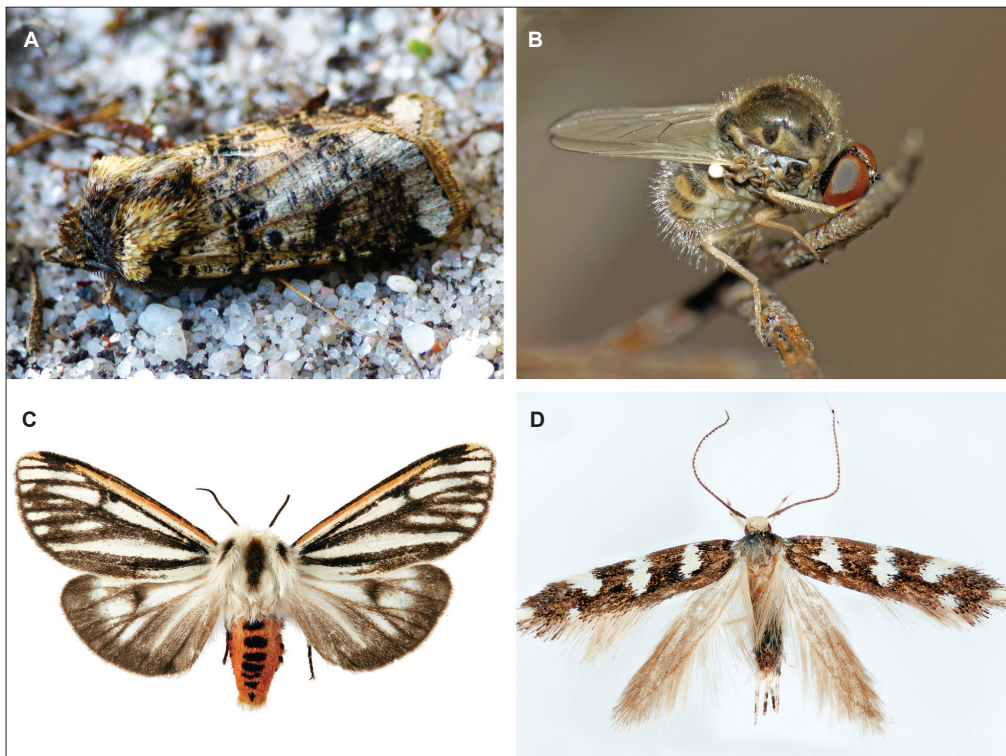


PLATE 7 – A. Male Variable Cutworm *Agrotis porphyricollis*. B. Mythicomyiine bee-fly *Acridophagus paganicus*. C. Male *Paramsacta marginata*. D. *Limnaecia* sp. TMAG\_F107740.





PLATE 8 –Threatened flora recorded from Musselroe Wind Farm. **A.** Scarlet Sundew *Drosera glanduligera*. **B.** Golden Dodder *Cuscuta tasmanica*. **C.** Roundleaf Wilsonia *Wilsonia rotundifolia*. **D.** Silky Wilsonia *Wilsonia humilis*.



PLATE 9 – Introduced species recorded from Musselroe Wind Farm. **A.** Annual Beardgrass *Polypogon monspeliensis*. **B.** Prickly Sowthistle *Sonchus asper*. **C.** Water Buttons *Cotula coronopifolia*. **D.** Coast Barbgrass *Parapholis incurva*.



the dry lagoon margin flora, and outside of the CPWS at a dried-up wetland south of Lanoma Point. Silky Wilsonia *Wilsonia humilis* (rare) was recorded at The Salties, within the CPWS, but restricted to a few small patches amongst dolerite rocks on the margin of the saltmarsh (pl. 8D).

Juniper Wattle *Acacia ulicifolia* (rare) was recorded approximately 1 km east of the Little Musselroe River, close to the southern boundary of the property. Slender Velvetbush *Lasiopetalum baueri* (rare) grew as heavily wind-pruned shrubs at the rocky margin of the saltlake at The Salties. Helicopter Bush *Spyridium vexilliferum* var. *vexilliferum* (rare) was recorded at Xanthorrhoea Ridge. A small but locally common population of Sand Grass tree *Xanthorrhoea arenaria*, listed as vulnerable on the Tasmanian *Threatened Species Protection Act 1995* and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, was found south of the Little Musselroe estuary. This appears to be the first record of the species from the Musselroe Wind Farm property. Shining Dogwood *Pomaderris paniculosa* subsp. *paralia* (rare) was recorded from The Salties and at The Prairie.

Two threatened species of the aquatic genus *Myriophyllum* were recorded. Tiny Watermilfoil *Myriophyllum integrifolium*, a first record for the area and listed as vulnerable, was found adjacent to Xanthorrhoea Ridge. Hooded Watermilfoil *Myriophyllum muelleri*, listed as rare, was recorded in the southern part of the Tregaron Lagoons (pl. 5), with locally abundant Fennel Pondweed *Stuckenia pectinata*. The tiny ephemeral triggerplant, Blushing Triggerplant *Stylidium beaugleholei* (rare) was recorded at The Prairie where it is locally abundant (pl. 4). Tiny Arrowgrass *Triglochin minutissima* (rare) was recorded occasionally in soil accumulated in damp crevices amongst granite rocks on the coast of Great Musselroe Bay.

Sixteen further species of threatened vascular flora have been previously recorded from the area (ALA 2020) but were not observed during this survey (appendix 1.1).

No listed threatened species of bryophytes and lichens were recorded, although many non-vascular plants are considered uncommon and may well qualify for listing. For example, lichens include the naturally rare Tasmanian endemics *Bactropsora paludicola*, *Eugeniella farinosa* (only the second record) and *Porina meridionalis*, and the equally rare (in Tasmania) *Caloplaca pulcherrima*, *Ocellomma rediuntum*, *Ramonia absconsa* and *Gyalecta pellucida*, all restricted to *Melaleuca ericifolia*-dominated swamps, which are themselves a vegetation type of very high conservation value, especially for cryptogams. Other uncommon, noteworthy species recorded included *Arthothelium endoauranticum* (from coastal scrub), *Endocarpon crassisporum* (from coastal grassland), and *Xanthoparmelia xerica* and the endemic *Lepra dactylinella* (from granite outcrops in heathland).

## Fauna

A single adult male of the Schayer's Grasshopper *Schayera baiulus* (Driessen *et al.* 2020), listed as endangered on the Tasmanian *Threatened Species Protection Act 1995*, was collected (9 November 2018) from the dunes behind Lemons Beach. Its identification is provisional, because no other

specimens of an adult male of this species are known from collections. The species was last recorded in 1988, when single specimens were found at Rushy Lagoon in the northeast, and Woolnorth in the northwest (Key 1991). Prior to that it was only known from the specimens associated with its original description (Erichson 1842, Key 1990).

Saline lagoons on the Cape Portland headland and towards the northern coastline hosted the salt-lake slater *Haloniscus searlei*. This isopod, an aquatic member of an otherwise terrestrial lineage, is associated with inland saline lagoons across southern Australia but is very rare in Tasmania, where it is listed as endangered and only known from two inland saline lagoons in the Midlands (Threatened Species Section 2021). Its presence in near-coastal lagoons at Cape Portland/Musselroe Bay is surprising and significantly enhances our understanding of the habitat requirements of this species.

Four threatened bird species and one threatened mammal species were observed. Hooded Plover *Thinornis cucullatus* (nationally vulnerable) were seen on all visited stretches of sandy shore, as well as on exposed windblown sand in the vicinity of the saltpans inland from the northern coastline. Fairy Tern *Sternula nereis* (vulnerable) were observed feeding just offshore along the northern coastline. Wedge-tailed Eagle *Aquila audax fleayi* (endangered) and White-Bellied Sea-eagle *Haliaeetus leucogaster* (vulnerable) were observed at various places on the property but no nests of either species were located. Tasmanian Devil *Sarcophilus harrisii* (endangered) scats were observed along many of the tracks walked and are known to occur in the general area.

## Exotic and pest species

Forty-nine species of introduced vascular plants were recorded (appendix 1.1). Common agricultural weeds include Winged Slender Thistle *Carduus tenuiflorus*, Variegated Thistle *Silybum marianum*, Capeweed *Arctotheca calendula*, Horehound *Marrubium vulgare*, Great Brome *Bromus diandrus* and Sweet Vernalgrass *Anthoxanthum odoratum*. Two shrubs that have become dominant components in parts of the landscape are Gorse *Ulex europaeus* and African Boxthorn *Lycium ferocissimum*. At the ruins of the old homestead at Home Beach, several species of garden origin have become naturalised including Century Plant *Agave americana*, Bearded Iris *Iris × germanica* and Caper Spurge *Euphorbia lathyris*. This area also hosted many species of introduced grasses and herbs. Common introduced species in wetland habitats include: Annual Beardgrass *Polypogon monspeliensis* (pl. 9A), Prickly Sowthistle *Sonchus asper* (pl. 9B), Water Buttons *Cotula coronopifolia* (pl. 9C), Buckshorn Plantain *Plantago coronopus* and Coast Barbggrass *Parapholis incurva* (pl. 9D). Drier coastal habitats included: Sweet Melilot *Melilotus indicus*, Winged Slender Thistle, African Boxthorn, Gorse, Scarlet Pimpernel *Lysimachia arvensis* and Fourleaf Allseed *Polycarpon tetraphyllum*. Coastal beach and foreshore supported Searocket *Cakile maritima*, Marram Grass *Ammophila arenaria*, African Boxthorn, Sea Spurge *Euphorbia paralias* and Buckshorn Plantain. Largely weed-free areas include the main eastern part of the property east of the Little Musselroe River (The Prairie) and other areas

of intact heathland. Four species, Winged Slender Thistle, African Boxthorn, Gorse and Horehound are declared weeds under the Tasmanian *Weed Management Act 1999*. The invasive South African Weed Orchid *Disa bracteata* Sw., a significant weed on mainland Australia but in the early stages of invasion in Tasmania, was recorded in the area in 2013 (Wapstra *et al.* 2020), but not seen during this survey.

Sixteen further species of introduced flora were previously recorded from the area (ALA 2020) but not observed during this survey (appendix 1.1). Only one species of introduced moss, *Eurhynchium praelongum*, was found growing in a disturbed site at Xanthorrhoea Ridge.

Remarkably few introduced insect species were collected (appendix 1.4). The list comprises Honeybee *Apis mellifera*, Eleven-spotted Ladybird *Coccinella undecimpunctata*, Sea-rocket Flea-beetle *Psylliodes marcida* and the cow-dung-feeding Dor-beetle *Geotrupes spiniger* and *Aphodius lividus*, all of European origin; the first two are now widespread across the state; the third is a new record for Tasmania and Australia but has since been discovered at several other localities on the Tasmanian north and east coast in association with its non-native foodplant *Cakile* species; while the fourth and fifth are found primarily in the east and northeast. Two more beetle species, *Attagenus pelli* and *Necrobia rufipes*, both associated with carrion, are cosmopolitan although it is possible that in Australia and Tasmania they represent early European introductions (the former is associated with pelts and the latter with cured meats). Both are rarely recorded in Tasmania.

Four introduced gastropods, all widespread species of European origin, were found (appendix 1.4): Small Pointed Snail *Prietocella barbara*, Garden Snail *Cornu aspersum*, Hedgehog Slug *Arion intermedius* and Striped Field-slug *Lehmannia nyctelia*. A fifth European species, Garlic Snail *Oxychilus alliarius*, was found at Little Musselroe and is highly likely to occur on the property.

Nine native moth species considered to be agricultural pests were collected. Most were noctuid moths: Bogong Moth *Agrotis infusa*, Brown Cutworm *Agrotis munda*, Variable Cutworm *Agrotis porphyricollis* (pl. 7A), Sugarcane Stem Borer *Bathytricha truncata*, Native Budworm *Helicoverpa punctigera* and Southern Armyworm *Persectania ewingii*. Two pest moth species from other families were the Small Tabby *Etiella behrii*, a pyralid which feeds on legumes, and the tortricid *Acropolitis rudisana*, which can be a pest on grapes. The only introduced lepidopteran recorded was the Cabbage White Butterfly *Pieris rapae*, another known pest species.

## DISCUSSION

Although a significant proportion of the Cape Portland property has been converted to improved pasture for cattle grazing, it retains pockets of high-quality undisturbed native habitat, such as The Salties, The Prairie and Xanthorrhoea Ridge (table 1).

Open treeless areas show evidence of intense grazing pressure from the high density of macropods and Wombats

*Vombatus ursinus*, particularly along the eastern side of the property, with grasses closely cropped to ground level. A significant proportion of open ground in the eastern heathlands is dominated by less-than-palatable spiny shrubs, including Prickly Moses *Acacia verticillata* and Ploughshare Wattle *A. gunnii*, as well as tougher sedges (especially *Gabnia* species) and Sagg *Lomandra longifolia*. In contrast, more palatable seasonal herbs were conspicuously rare or absent. The greatest diversity of insects was found in the eastern heathlands, including many habitat specialists. The seasonal moth fauna was largely typical of that which can be found during spring in coastal heathlands, and in vegetation dominated by *Allocasuarina*, *Acacia* and native and introduced grasses, apart from the notable absence of eucalypt feeders due to the almost total absence of *Eucalyptus* on the property. This collection included around 13% of the Lepidoptera in Tasmania. No Tasmanian endemic species were recorded, probably because vegetation types were typical of the more general southern Australian autochthonous flora. The eastern heathlands proved to be the most diverse site for Lepidoptera, with almost 60 taxa recorded. The fauna here was dominated by geometrid species that feed on *Acacia*, *Kunzea*, *Allocasuarina*, *Leptospermum* and low-growing shrubs such as *Epacris*. The noctuid fauna was also relatively diverse with 15 species; those with the highest abundance were grass-feeders such as the Variable Cutworm and agricultural pests such as Bogong Moth and Southern Armyworm.

The area surrounding the saline lagoons around The Salties and extending inland as far as the paddock fences is species-rich for plants and animals, perhaps due to the diverse mosaic of habitat types present in a relatively small area, including coastal grassland, saline and freshwater shallow lagoons, rocky marsupial lawn, rocky headland and foreshore, dunes, and seasonally wet grassland and heathland. In addition to The Salties, a pocket of high species richness in and around a shallow but permanent freshwater habitat supported *Melaleuca ericifolia* closed forest and regenerating grassland and heathland known as The Bullseye. Permanent bodies of fresh (rather than brackish or saline) water are generally rare on the property, and mostly associated with the course of the Little Musselroe River and areas of low elevation to the east.

Given the history of the Cape Portland property and its current land use, the relatively high number (65 taxa) of naturalised, exotic vascular plants is not surprising. Large tracts of the property consist of improved pasture and, consequently, contain many species of agricultural weeds. Most of these taxa are annual and perennial herbs and grasses, and were recorded in pastures, along roadsides and fence lines within the property and around areas of habitation. Many of the species of introduced plants are likely to have originated from past agricultural activities and the relatively high number of lepidopteran pests is likely a result of the modified agricultural environment prevalent in the area. Recent efforts to control invasive exotic plants have had a positive effect, with control of African Boxthorn being particularly successful. Many of the introduced plants recorded during the survey can



form widespread and intractable populations, including species such as Annual Beardgrass, Prickly Sowthistle, Water Buttons, Buckshorn Plantain and Coast Barbgrass. Small-scale infestations of Century Plant, Bearded Iris and Caper Spurge have most likely persisted at the site of the old homestead at the northern end of Home Beach since it was inhabited and have spread to a small extent to the immediate surrounding area.

Previous surveys of the property have recorded 16 species of threatened flora that were not identified during this survey. This could be at least partly due to this survey not coinciding with the flowering time of these species (particularly orchids), or the species having been recorded from areas or habitats not sampled in this survey.

The property has outstanding ecological and nature conservation values, although these are not evenly distributed: areas of enclosed pasture tend to have little value whereas the established reserves within the property have the highest. Notably, several threatened species occur outside of reserves.

The property contains large areas of vegetation that is highly susceptible to *Phytophthora cinnamomi* root rot, particularly high-density populations of Southern Grasstree *Xanthorrhoea australis*, small populations of Sand Grasstree *X. arenaria*, and large areas of damp heathland. The mosaic of heathland and scrub northeast of The Prairie has developed at least partly as a response to fire history, and future fire management will play a role on the proportions of these two habitat types.

Threatened beach-nesting shorebirds such as Fairy Tern, Hooded Plover and Sooty Oystercatcher *Haematopus fuliginosus* are very sensitive to disturbance from humans, dogs, trail-bikes and four-wheel-drives; the relative lack of such disturbance at Musselroe (other than at Lemons Beach) affords them an increasingly rare degree of protection. These same environments are also well-known foraging refugia for a large number of international migratory waders, including summer and winter visitors such as Double-banded Plover *Charadrius bicinctus* that are declining globally.

The high density of native grazing marsupials has had a significant impact in shaping the habitats and species richness of the property. For instance, high species richness among threatened species is concentrated particularly in the non-wooded but still naturally vegetated parts of the surveyed area, including marsupial lawns and the edges of lagoons and runnels, and this may be due at least partly to grazing pressure that keeps shading by perennial shrubs to a minimum. However, areas of the property east of the Little Musselroe River exhibit extremely high grazing pressure (from native marsupials), and a reduced diversity of herbaceous plants.

In conclusion, the Cape Portland property hosts a number of vascular plant, animal and lichen species that, while common or at least present on mainland Australia, in Tasmania are restricted to the northeasternmost corner of the island. Despite its long history of management for grazing, the property retains significant natural values, including high-quality patches of unusual vegetation (e.g., the almost pure stand of Southern Grasstree at Xanthorrhoea

Ridge), and a high proportion of threatened plant and animal species.

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## REFERENCES

- ABRS** 2018a: *Australian Moss Name Index (AusMoss)*, Australian Biological Resources Study, Canberra. <https://moss.biodiversity.org.au/nsl/services/AusMoss> (accessed 21 August 2018).
- ABRS** 2018b: *Australian Faunal Directory*. Australian Biological Resources Study, Canberra. <https://biodiversity.org.au/afd/mainchecklist> (accessed 15 December 2018).
- ALA (Atlas of Living Australia)** 2020: *Occurrence records*, [https://biocache.ala.org.au/occurrences/search?q=cl1048%3AFurneaux&qualityProfile=ALA&fq=institution\\_uid%3A%22in25%22&fq=\(data\\_resource\\_uid%3A%22dr347%22%20OR%20data\\_resource\\_uid%3A%22dr1840%22\)](https://biocache.ala.org.au/occurrences/search?q=cl1048%3AFurneaux&qualityProfile=ALA&fq=institution_uid%3A%22in25%22&fq=(data_resource_uid%3A%22dr347%22%20OR%20data_resource_uid%3A%22dr1840%22)) (accessed 18 August 2020).
- AVH (The Australasian Virtual Herbarium)** 2020: *Occurrence records*, [https://avh.ala.org.au/occurrences/search?q=cl1048%3AFurneaux&qc=data\\_hub\\_uid%3Adh9&fq=collection\\_uid%3A%22co60%22#tab-recordsView](https://avh.ala.org.au/occurrences/search?q=cl1048%3AFurneaux&qc=data_hub_uid%3Adh9&fq=collection_uid%3A%22co60%22#tab-recordsView) (accessed 18 August 2020).
- Baker, M.L., Grove, S., de Salas, M.F., Byrne, C., Cave, L., Bonham, K., Moore, K. & Kantvilas, G.** 2019: Tasmanian Museum and Art Gallery's Expedition of Discovery I – The flora and fauna of *Wind Song*, Little Swanport, Tasmania. *Papers and Proceedings of the Royal Society of Tasmania* **153**: 5–30.
- BOM** (Bureau of Meteorology) 2020: *Climate statistics for Australian locations: Orford (Aubin Court)*. [http://www.bom.gov.au/climate/averages/tables/cw\\_092045.shtml](http://www.bom.gov.au/climate/averages/tables/cw_092045.shtml) (accessed 27 April 2020).

- de Salas, M.F. & Baker, M.L.** 2021: *A Census of the Vascular Plants of Tasmania & Index to the Student's Flora of Tasmania and Flora of Tasmania Online*. Tasmanian Herbarium, TMAG, Hobart. <http://www.tmag.tas.gov.au> (accessed 12 May 2021).
- DPIPWE** (Department of Primary Industries, Parks, Water and Environment) 2020: *TASVEG 4.0, Tasmanian Vegetation Monitoring and Mapping Program*. Released July 2020 (accessed 18 August 2020).
- Driessen, M.M, Grove, S.J. & Su, Y.N.** 2020: Probable adult male Schayer's grasshopper *Schayera baiulus* (Erichson, 1842) (Orthoptera: Acrididae: Catantopinae) found in north-eastern Tasmania. *Australian Entomologist* **47**(3): 155–161.
- Elix, J.A. & Kantvilas, G.** 2020: Three new species and a new record of buellioid lichens (Caliciaceae, Ascomycota) from Tasmania. *Australasian Lichenology* **87**: 2025.
- Elix, J.A., Kantvilas, G. & McCarthy, P.M.** 2019: Two new species of *Rinodina* (Physciaceae, Ascomycota) from southern Australia. *Australasian Lichenology* **84**: 1015.
- Environment Australia** 2001: *A Directory of Important Wetlands in Australia, Third Edition*. Environment Australia, Canberra: 137 pp.
- Erichson, W.F.** 1842: Beitrag zur Insecten-fauna von Vandiemensland, mit besonderer Berücksichtigung der geographischen Verbreitung der Insecten. *Archiv für Naturegeschichte* **8**: 83–287.
- Jennings, D.J. & Sutherland, F.L.** (1969) *Geology of the Cape Portland Area*. Technical Report, Department of Mines (Tasmania) **13**: 45–82.
- Kantvilas, G., Coppins, B.J., McCarthy, P.M. & Elix, J.A.** 2020: New records of lichens from Tasmania, principally from the 2018 TMAG Expedition of Discovery to Musselroe Bay. *Papers and Proceedings of the Royal Society of Tasmania* **154**: 1–8.
- Key, K.H.L.** 1990: On the identity of Erichson's species *Calliptamus baiulus* (Orthoptera: Acrididae). *Invertebrate Taxonomy* **3**: 519–522.
- Key, K.H.L.** 1991. Rediscovery of the Tasmanian grasshopper *Schayera baiulus* (Orthoptera: Acrididae) in the field. *Australian Journal of Zoology* **39**: 655–660.
- LIST** (2020) *Land Information Systems Tasmania*. <https://www.thelist.tas.gov.au/app/content/home/> (accessed 27 April 2020).
- McCarthy, P.M.** 2006: *Checklist of Australian Liverworts and Hornworts*. Australian Biological Resources Study, Canberra. [http://www.anbg.gov.au/abrs/liverwortlist/liverworts\\_a\\_z.html](http://www.anbg.gov.au/abrs/liverwortlist/liverworts_a_z.html) (accessed 27 August 2020).
- McCarthy, P.M.** 2020: *Checklist of the Lichens of Australia and its Island Territories*. Australian Biological Resources Study, Canberra. <http://www.anbg.gov.au/abrs/lichenlist/introduction.html> (accessed 1 March 2020).
- McCarthy, P.M. & Kantvilas, G.** 2018: *Anisomeridium disjunctum* (Monoblastiaceae), a new lichen species from Tasmania, with a key to the genus in Australia. *Australasian Lichenology* **83**: 54–60.
- McClenaghan, M.P.** (compiler) 2005. *Digital Geological Atlas 1:25 000 Scale Series. Sheet 5848 Lyme Regis*. Mineral Resources Tasmania.
- Orange, A., James, P.W. & White, F.J.** 2010: *Microchemical Methods for the Identification of Lichens*. British Lichen Society, London: 101 pp.
- Peel, M.C., Finlayson, B.L. & McMahon, T.A.** 2007: Updated world map of the Köppen-Geiger climate classification. *Hydrology & Earth Systems Sciences* **11**: 1633–1644.
- Stanisic, J., Shea, M., Potter, D.G. & Flannery, T.** 2017: *Australian land snails. Volume 2, A field guide to eastern Australian species*. Bioculture Press for the Australian Museum: 594 pp.
- Threatened Species Section** (2021). *Haloniscus searlei* (Salt Lake Slater): Species Management Profile for Tasmania's Threatened Species Link. <https://www.threatenedspecieslink.tas.gov.au/Pages/Salt-Lake-Slater.aspx> (accessed 5 July 2021).
- Tropicos.org.** 2018: *Botanical Information System at the Missouri Botanical Garden*. (Missouri Botanical Garden, Saint Louis). <http://www.tropicos.org> (accessed 21 August 2018).
- Wapstra, M., Baker, M.L. & Daniels, G.D.** 2020: Collecting history and distribution of the potentially invasive *Disa bracteata* (South African orchid) in Tasmania. *Papers and Proceedings of the Royal Society of Tasmania* **154**: 51–60.
- Wapstra, H., Wapstra, A., Wapstra, M. & Gilfedder, L.** 2005: *The Little Book of Common Names for Tasmanian Plants*. Department of Primary Industries, Parks, Water and Environment.
- Webb, M., Hall, A., Kidd, D. & Minasny, B.** 2015: Local-scale spatial modelling for interpolating climatic temperature variables to predict agricultural plant suitability. *Theoretical & Applied Climatology* **124**: 1145–1165.

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## APPENDIX 1

## Flora and fauna of the Musselroe Wind Farm

Taxa marked with \* were observed during the survey but not collected; # were taxa recorded prior to the survey but not recorded during the survey; - were recorded prior to the survey and during the survey; i are introduced taxa in Tasmania; r, x, e and v are considered rare, extinct, endangered and vulnerable under Tasmania's Threatened Species Protection Act 1995; + are new records for Tasmania; ? are taxa that have an uncertain status, i.e., uncertain whether they are introduced to Tasmania or native.

## Appendix 1.1: Vascular Plants of Musselroe Wind Farm

## EUDICOTS

## Aizoaceae

- \* *Carpobrotus rossii* (Haw.) Schwantes
- \*# *Disphyma crassifolium* (L.) L.Bolus subsp. *clavellatum* (Haw.) Chinnock
- *Tetragonia implexicoma* (Miq.) Hook.f.

## Amaranthaceae

- *Hemichroa pentandra* R.Br.
- *Rhagodia candolleana* Moq. subsp. *candolleana*

## Apiaceae

- *Apium prostratum* Labill. ex Vent. subsp. *prostratum* var. *filiforme* (A.Rich.) Kirk
- *Apium prostratum* Labill. ex Vent. subsp. *prostratum* var. *prostratum*
- # *Daucus glochidiatus* (Labill.) Fisch., C.A.Mey. & Ave-Lall.
- *Eryngium vesiculosum* Labill.
- *Xanthosia tasmanica* Domin

## Apocynaceae

- # *Alyxia buxifolia* R.Br.

## Araliaceae

- # *Hydrocotyle callicarpa* Bunge
- *Hydrocotyle capillaris* F.Muell. ex Klatt
- # *Hydrocotyle foveolata* H.Eichler
- # *Hydrocotyle muscosa* R.Br. ex A.Rich.
- *Hydrocotyle sibthorpioides* Lam.

## Asteraceae

- *Actites megalocarpus* (Hook.f.) Lander
- *Angianthus preissianus* (Steetz) Benth.
- i- *Arctotheca calendula* (L.) K.Lewin
- *Brachyscome aculeata* (Labill.) Less.
- # *Brachyscome graminea* (Labill.) F. Muell.
- *Brachyscome parvula* Hook.f.
- r# *Calocephalus lacteus* Less.
- i *Carduus tenuiflorus* Curtis
- *Cassinia aculeata* (Labill.) R.Br. subsp. *aculeata*
- e# *Cassinia rugata* N.G.Walsh
- *Chrysocephalum apiculatum* (Labill.) Steetz subsp. *apiculatum*
- *Coronidium scorpioides* (Labill.) Paul G.Wilson
- # *Cotula australis* (Sieber ex Spreng.) Hook.f.
- i- *Cotula coronopifolia* L.

- r# *Cotula vulgaris* var. *australasica* J.H.Willis
- # *Craspedia glauca* (Labill.) Spreng.
- # *Craspedia rosulata* Rozefelds & A.M.Buchanan
- # *Cymbonotus preissianus* Steetz
- # *Gnaphalium indutum* Hook.f. subsp. *indutum*
- i# *Hypochaeris glabra* L.
- i *Hypochaeris radicata* L.
- *Lagenophora stipitata* (Labill.) Druce
- *Leptinella longipes* Hook.f.
- *Leptinella reptans* (Benth.) D.G.Lloyd & C.J.Webb
- *Leptorhynchus squamatus* (Labill.) Less. subsp. *squamatus*
- *Leucophyta brownii* Cass.
- # *Millotia tenuifolia* Cass. var. *tenuifolia*
- *Olearia lepidophylla* (Pers.) Benth.
- # *Ozothamnus turbinatus* DC.
- *Senecio glomeratus* Desf. ex Poir.
- r# *Siloxerus multiflorus* (Nees) P.S.Short
- i *Silybum marianum* (L.) Gaertn.
- i *Sonchus asper* (L.) Hill
- i- *Sonchus oleraceus* L.
- i *Vellereophyton dealbatum* (Thunb.) Hilliard & B.L.Burtt

## Boraginaceae

- # *Cynoglossum australe* R.Br.
- *Hackelia suaveolens* (R.Br.) Dimon & M.A.M.Renner

## Brassicaceae

- i *Brassica tournefortii* Gouan
- i- *Cakile maritima* Scop. subsp. *maritima*
- i *Capsella bursa-pastoris* (L.) Medik.

## Campanulaceae

- *Lobelia anceps* L.f.
- *Lobelia irrigua* R.Br.
- *Lobelia pedunculata* R.Br.
- # *Wahlenbergia gracilentia* Lothian
- *Wahlenbergia gymnoclada* Lothian

## Caryophyllaceae

- i- *Cerastium glomeratum* Thuill.
- i# *Cerastium semidecandrum* L.
- *Colobanthus apetalus* (Labill.) Druce var. *apetalus*
- i *Polycarpon tetraphyllum* (L.) L.
- i# *Sagina maritima* Don
- i# *Silene nocturna* L.
- *Spergularia tasmanica* (Kindb.) L.G.Adams
- *Stellaria angustifolia* Hook. subsp. *tenella* (Benth.) C.H.Mill. & J.G.West
- *Stellaria pallida* (Dumort.) Crép.

## Casuarinaceae

- *Allocasuarina littoralis* (Salisb.) L.A.S.Johnson
- *Allocasuarina monilifera* (L.A.S.Johnson) L.A.S.Johnson
- *Allocasuarina paludosa* (Sieber ex Spreng.) L.A.S.Johnson
- *Allocasuarina verticillata* (Lam.) L.A.S.Johnson

## Celastraceae

- *Stackhousia monogyna* Labill.

## Chenopodiaceae

- \* *Sarcocornia blackiana* (Ulbr.) A.J.Scott



- \*# *Sarcocornia quinqueflora* (Bunge ex Ung.-Sternb.)  
A.J.Scott
- # *Suaeda australis* (R.Br.) Moq.
- # *Suaeda maritima* (L.) Dumort subsp. *maritima*
- # *Tecticornia arbuscula* (R.Br.) K.A.Sheph. & Paul  
G.Wilson
- Convolvulaceae**
- r# *Calystegia soldanella* (L.) Roem. & Schult.
- *Convolvulus angustissimus* R.Br. subsp. *angustissimus*
- r- *Cuscuta tasmanica* Engelm.
- *Dichondra repens* J.R.Forst. & G.Forst.  
*Wilsonia backhousei* Hook.f.
- r- *Wilsonia humilis* R.Br.
- r *Wilsonia rotundifolia* Hook.
- Crassulaceae**
- Crassula decumbens* Thunb. var. *decumbens*
- Crassula sieberiana* (Schult. & Schult.f.) Druce
- Dilleniaceae**
- Hibbertia hirticalyx* Toelken
- Hibbertia prostrata* Hook.
- Hibbertia sericea* (R.Br. ex DC.) Benth. var. *sericea*
- Droseraceae**
- *Drosera auriculata* Backh. ex Planch.
- r *Drosera glanduligera* Lehm.
- # *Drosera hookeri* R.P.Gibson, B.J.Conn & Conran  
*Drosera macrantha* Endl. subsp. *planchonii* (Hook.f.  
ex Planch.) N.G.Marchant
- *Drosera peltata* Thunb.
- Elaeocarpaceae**
- Tetratheca pilosa* Labill. subsp. *pilosa*
- Ericaceae**
- # *Epacris impressa* Labill.
- # *Epacris lanuginosa* Labill.
- # *Leucopogon collinus* (Labill.) R.Br.
- *Leucopogon parviflorus* (Andrews) Lindl.
- *Leucopogon virgatus* (Labill.) R.Br. var. *virgatus*
- *Monotoca elliptica* (Sm.) R.Br.  
*Styphelia adscendens* R.Br.
- *Styphelia ericoides* Sm.
- # *Styphelia humifusa* (Cav.) Pers.
- Euphorbiaceae**
- *Amperea xiphioclada* (Sieber ex Spreng.) Druce var.  
*xiphioclada*
- i *Euphorbia lathyris* L.
- i *Euphorbia paralias* L.
- i *Euphorbia peplus* L.
- Fabaceae**
- *Acacia gunnii* Benth.
- Acacia longifolia* (Andrews) Willd. subsp. *sophorae*  
(Labill.) Court
- Acacia melanoxylon* R.Br.
- Acacia myrtifolia* (Sm.) Willd.
- Acacia suaveolens* (Sm.) Willd.
- *Acacia terminalis* (Salisb.) J.F.Macbr.
- r *Acacia ulicifolia* (Salisb.) Court
- *Acacia verticillata* (L'Hér.) Willd. subsp. *ovoidea*  
(Benth.) Court
- *Acacia verticillata* (L'Hér.) Willd. subsp. *verticillata*
- *Aotus ericoides* (Vent.) G.Don
- *Bossiaea cinerea* R.Br.
- *Bossiaea prostrata* R.Br.  
*Dillwynia sericea* A.Cunn.
- v# *Glycine latrobeana* (Meisn.) Benth.  
*Hovea heterophylla* A.Cunn. ex Hook.f.
- # *Kennedia prostrata*
- i- *Melilotus indicus* (L.) All.
- *Platylobium triangulare* R.Br.
- # *Pultenaea dentata* Labill.
- # *Pultenaea stricta* Sims
- # *Pultenaea tenuifolia* R.Br. & Sims
- i\*# *Trifolium campestre* Schreb.
- i *Trifolium dubium* Sibth.
- i- *Trifolium repens* L.
- i# *Trifolium resupinatum* L.
- i- *Trifolium subterraneum* L.
- i *Trifolium tomentosum* L.
- i *Ulex europaeus* L.
- i- *Vicia sativa* L. subsp. *nigra* (L.) Ehrh.
- Gentianaceae**
- i- *Centaurium erythraea* Rafn  
*Cicendia filiformis* (L.) Delarbre
- r# *Schenkia australis* (R.Br.) G.Mans.
- *Sebaea albidiflora* F.Muell.
- # *Sebaea ovata* (Labill.) R.Br.
- i# *Erodium botrys* (Cav.) Bertol.
- i# *Erodium cicutarium* (L.) L'Hér. ex Aiton
- # *Geranium brevicaulis* Hook.
- i# *Geranium molle* L.
- # *Geranium retrorsum* L'Hér. ex DC.  
*Geranium solanderi* Carolin
- Goodeniaceae**
- Goodenia humilis* R.Br.
- *Goodenia lanata* R.Br.
- Haloragaceae**
- Gonocarpus micranthus* Thunb. subsp. *micranthus*
- v *Myriophyllum integrifolium* (Hook.f.) Hook.f.
- r- *Myriophyllum muelleri* Sond.  
*Myriophyllum simulans* Orchard  
*Myriophyllum variifolium* Hook.f.
- Hypericaceae**
- Hypericum gramineum* G.Forst.
- Lamiaceae**
- i *Marrubium vulgare* L.
- Linaceae**
- Linum marginale* A.Cunn.
- Loganiaceae**
- Mitrasacme pilosa* Labill. var. *stuartii* Hook.f.
- Lythraceae**
- Lythrum hyssopifolia* L.
- Malvaceae**
- r- *Lasiopetalum baueri* Steetz
- *Lawrenca spicata* Hook.
- Menyanthaceae**
- Ornduffia reniformis* (R.Br.) Tippery & Les
- Myrsinaceae**
- i *Lysimachia arvensis* (L.) U.Manns & Anderb.
- Myrtaceae**
- Calytrix tetragona* Labill.

- Eucalyptus nitida* Hook.f.  
*Eucalyptus pauciflora* Sieber ex Spreng. subsp. *pauciflora*
- # *Euryomyrtus parviflora* Miq.  
 - *Kunzea ambigua* (Sm.) Druce  
 - *Leptospermum laevigatum* (Gaertn.) F.Muell.  
*Leptospermum scoparium* J.R.Forst. & G.Forst.  
 - *Melaleuca ericifolia* Sm.  
 # *Melaleuca squarrosa* Donn ex Sm.
- Orobanchaceae**  
 i# *Parentucellia latifolia* (L.) Caruel
- Oxalidaceae**  
*Oxalis radicata* A.Rich.  
 # *Oxalis rubens* Haw.  
 i# *Oxalis corniculata* L. subsp. *corniculata*
- Phrymaceae**  
 - *Thyridia repens* (R.Br.) W.R.Barker & Beardsley
- Phyllanthaceae**  
 - *Poranthera microphylla* Brongn.
- Pittosporaceae**  
*Billardiera mutabilis* Salisb.  
 - *Bursaria spinosa* Cav. subsp. *spinosa*
- Plantaginaceae**  
 - *Callitriche stagnalis* Scop.  
 # *Gratiola nana* Benth.  
 - *Plantago bellidioides* Decne.  
 i- *Plantago coronopus* L. subsp. *coronopus*  
 # *Plantago hispida* R.Br.  
 # *Plantago varia* R.Br.  
*Veronica gracilis* R.Br.
- Polygalaceae**  
 - *Comesperma volubile* Labill.
- Polygonaceae**  
 i- *Acetosella vulgaris* Fourr.  
 - *Muehlenbeckia adpressa* (Labill.) Meisn.  
 # *Rumex brownii* Campd.
- Portulacaceae**  
*Calandrinia calyptrata* Hook.f.  
 r# *Calandrinia granulifera* Benth.  
 - *Montia australasica* (Hook.f.) Pax & K.Hoffm.
- Primulaceae**  
*Lysimachia arvensis* (L.) U.Manns & Anderb.
- Proteaceae**  
 - *Banksia marginata* Cav.  
*Hakea teretifolia* (Salisb.) Britten subsp. *hirsuta* (Endl.) R.M.Barker  
*Lomatia tinctoria* (Labill.) R.Br.
- Ranunculaceae**  
 - *Clematis microphylla* DC.  
*Ranunculus amphitrichus* Colenso  
*Ranunculus sessiliflorus* R.Br. ex DC. var. *sessiliflorus*  
*Ranunculus trichophyllus* Chaix
- Rhamnaceae**  
 - *Pomaderris apetala* Labill. subsp. *apetala*  
*Pomaderris apetala* Labill. subsp. *maritima* N.G.Walsh & Coates  
*Pomaderris elliptica* Labill. var. *diemenica* N.G.Walsh & Coates
- # *Pomaderris oraria* F.Muell. ex Reissek subsp. *oraria*  
 r- *Pomaderris paniculosa* F.Muell. ex Reissek subsp. *paralia* N.G.Walsh  
*Pomaderris pilifera* N.A.Wakef. subsp. *pilifera*  
 \*# *Pomaderris racemosa* Hook.  
 r- *Spyridium vexilliferum* (Hook.) Reissek var. *vexilliferum*
- Rosaceae**  
 # *Acaena echinata* Nees  
 - *Acaena novae-zelandiae* Kirk  
 \*# *Acaena pallida* (Kirk) Allan
- Rubiaceae**  
 # *Asperula conferta* Hook.f.  
 # *Galium australe* DC.  
 i *Galium murale* (L.) All.  
 i *Sherardia arvensis* L.
- Rutaceae**  
*Boronia parviflora* Sm.  
*Correa alba* Andrews var. *alba*
- Santalaceae**  
*Leptomeria drupacea* (Labill.) Druce
- Scrophulariaceae**  
 - *Myoporum insulare* R.Br.
- Solanaceae**  
 i- *Lycium ferocissimum* Miers  
*Solanum laciniatum* Aiton
- Stylidiaceae**  
 r *Stylidium beaugleholei* J.H.Willis  
 # *Stylidium graminifolium* Sw.  
 r# *Stylidium perpusillum* Hook.f.
- Theophrastaceae**  
*Samolus repens* (J.R.Forst. & G.Forst.) Pers. var. *repens*
- Thymelaeaceae**  
 - *Pimelea glauca* R.Br.  
 - *Pimelea humilis* R.Br.  
*Pimelea linifolia* Sm.  
 - *Pimelea serpyllifolia* R.Br. subsp. *serpyllifolia*
- Urticaceae**  
*Urtica incisa* Poir.
- Violaceae**  
*Viola cleistogamoides* (L.G.Adams) Seppelt  
 - *Viola hederacea* Labill. subsp. *hederacea*
- MAGNOLIIDS**
- Lauraceae**  
 - *Cassytha glabella* R.Br. f. *dispar* (Schltdl.) J.Z.Weber  
 # *Cassytha pedicellosa* J.Z.Weber  
*Cassytha pubescens* R.Br.
- MONOCOTS**
- Asparagaceae**  
 i\* *Agave americana* L.  
 # *Arthropodium minus* R.Br.  
 # *Arthropodium pendulum* DC.  
 # *Chamaescilla corymbosa* (R.Br.) F.Muell. ex Benth. var. *corymbosa*  
 - *Lomandra longifolia* Labill.  
 # *Thysanotus patersonii* R.Br.

**Asphodelaceae**

- # *Bulbine bulbosa* (R.Br.) Haw.
- # *Bulbine glauca* (Raf.) E.M.Watson
- Bulbine semibarbata* (R.Br.) Haw.

**Centrolepidaceae**

- *Centrolepis aristata* (R.Br.) Roem. & Schult.
- *Centrolepis polygyna* (R.Br.) Hieron.
- *Centrolepis strigosa* (R.Br.) Poir. subsp. *strigosa*

**Colchicaceae**

- Burchardia umbellata* R.Br.
- # *Wurmbea dioica* (R.Br.) F.Muell. subsp. *dioica*

**Cyperaceae**

- Baumea juncea* (R.Br.) Palla
- Carex appressa* R.Br.
- *Carex breviculmis* R.Br.
- *Eleocharis acuta* R.Br.
- Eleocharis spachelata* R.Br.
- # *Ficinia nodosa* (Rottb.) Goetgh., Muasya & D.A.Simpson
- Gahnia filum* (Labill.) F.Muell.
- *Gahnia trifida* Labill.
- # *Isolepis cernua* (Vahl) Roem. & Schult.
- Isolepis hookeriana* Boeckeler
- ?i *Isolepis levynsiana* Muasya & D.A.Simpson
- *Isolepis marginata* (Thunb.) A.Dietr.
- Isolepis platycarpa* (S.T.Blake) Soják
- # *Isolepis setacea* (L.) R.Br.
- # *Isolepis subtilissima* Boeckeler
- *Lepidosperma concavum* R.Br.
- # *Lepidosperma ensiforme* (Rodway) D.I.Morris
- # *Lepidosperma gladiatum* Labill.
- Lepidosperma inops* F.Muell. ex Rodway
- # *Lepidosperma laterale* R.Br.
- Schoenoplectus pungens* (Vahl) Palla
- # *Schoenus apogon* Roem. & Schult.
- # *Schoenus lepidosperma* (F.Muell.) K.L.Wilson subsp. *lepidosperma*
- *Schoenus nitens* (R.Br.) Poir.
- Schoenus tesquorum* J.M.Black

**Hemerocallidaceae**

- # *Dianella brevicaulis* (Ostenf.) G.W.Carr & P.F.Horsfall
- Dianella revoluta* R.Br. var. *revoluta*

**Hypoxidaceae**

- # *Pauridia glabella* (R.Br.) Snijman & Kocyan var. *glabella*
- # *Pauridia vaginata* (Schltdl.) Snijman & Kocyan var. *vaginata*

**Iridaceae**

- *Diplarrena moraea* Labill.
- i- *Iris germanica* L.
- # *Patersonia fragilis* (Labill.) Asch. & Graebn.

**Juncaceae**

- i *Juncus bufonius* L.
- # *Juncus capitatus* Weigel
- \*# *Juncus kraussii* Hochst. subsp. *australiensis* (Buchenau) Snogerup
- Juncus sarophorus* L.A.S.Johnson
- # *Luzula densiflora* (H.Nordensk.) Edgar

- # *Luzula meridionalis* H.Nordensk.

**Juncaginaceae**

- # *Cynnogeton alcockiae* (Aston) Mering & Kadereit
- Cynnogeton procerum* (R.Br.) Buchenau
- r- *Triglochin minutissima* F.Muell.
- # *Triglochin nana* F.Muell.
- *Triglochin striata* Ruiz & Pav.

**Orchidaceae**

- # *Caladenia latifolia* R.Br.
- v# *Caladenia patersonii* R.Br.
- # *Cyrtostylis reniformis* R.Br.
- r# *Cyrtostylis robusta* D.L.Jones & M.A.Clem.
- # *Diuris chryseopsis* D.L.Jones
- # *Diuris orientis* D.L.Jones
- x# *Diuris palustris* Lindl.
- Diuris sulphurea* R.Br.
- # *Glossodia major* R.Br.
- Microtis arenaria* Lindl.
- # *Pterostylis curta* R.Br.
- r# *Pterostylis sanguinea* D.L.Jones & M.A.Clem.
- # *Pterostylis tasmanica* D.L.Jones
- v# *Pterostylis ziegeleri* D.L.Jones
- x# *Thelymitra antennifera* (Lindl.) Hook.f.
- # *Thelymitra exigua* Jeanes

**Poaceae**

- i\* *Agrostis capillaris* L. var. *capillaris*
- i *Aira caryophyllea* L. subsp. *caryophyllea*
- i *Aira elegantissima* Schur
- i *Aira praecox* L.
- i\* *Ammophila arenaria* (L.) Link subsp. *arenaria*
- i *Anthoxanthum odoratum* L.
- *Austrostipa flavescens* (Labill.) S.W.L.Jacobs & J.Everett
- Austrostipa stipoides* (Hook.f.) S.W.L.Jacobs & J.Everett
- i *Bromus diandrus* Roth
- i *Bromus hordeaceus* L.
- i *Cynosurus echinatus* L.
- *Distichlis distichophylla* (Labill.) Fassett
- i *Holcus lanatus* L.
- r# *Lachnagrostis robusta* (Vickery) S.W.L.Jacobs
- i- *Lagurus ovatus* L.
- i- *Parapholis incurva* (L.) C.E.Hubb.
- *Phragmites australis* (Cav.) Trin. ex Steud.
- i# *Poa annua* L.
- Poa poiiformis* (Labill.) Druce var. *poiiformis*
- Poa rodwayi* Vickery
- i# *Polypogon maritimus*?? var. *subspatheaceus* (Req.) Parl.
- i *Polypogon monspeliensis* (L.) Desf.
- Puccinellia stricta* (Hook.f.) C.H.Blom
- *Rytidosperma caespitosum* (Gaudich.) Connor & Edgar
- Rytidosperma setaceum* (R.Br.) Connor & Edgar
- *Rytidosperma tenuius* (Steud.) A.Hansen & Sunding
- *Themeda triandra* Forssk.
- i# *Thinopyrum junceiforme* (Á.Löve & D.Löve) Á.Löve
- i *Vulpia bromoides* (L.) Gray
- i# *Vulpia myuros* (L.) C.C.Gmel. f. *myuros*
- i# *Vulpia myuros* f. *megalura* (Nutt.) Stace & R.Cotton



- *Zoysia macrantha* Desv. subsp. *walshii* Night.

**Potamogetonaceae**

# *Lepilaena cylindrocarpa* (Körn. ex Müll.Stuttg) Benth.

*Potamogeton cheesemanii* A.Benn.

r *Stuckenia pectinata* (L.) Börner

**Restionaceae**

# *Apodasmia brownii* (Hook.f.) B.G.Briggs & L.A.S.Johnson

*Empodisma minus* (Hook.f.) L.A.S.Johnson & D.F.Cutler

# *Hypolaena fastigiata* R.Br.

- *Leptocarpus tenax* (Labill.) R.Br.

**Ruppiaceae**

- *Ruppia polycarpa* R.Mason

**Xanthorrhoeaceae**

v *Xanthorrhoea arenaria* D.J.Bedford

*Xanthorrhoea australis* R.Br.

**Zosteraceae**

# *Zostera muelleri* Irmisch ex Asch. subsp. *muelleri*

**PTERIDOPHYTES**

**Adiantaceae**

- *Adiantum aethiopicum* L.

**Dennstaedtiaceae**

*Pteridium esculentum* (G.Forst.) Cockayne subsp. *esculentum*

**Dicksoniaceae**

*Dicksonia antarctica* Labill.

**Lindsaeaceae**

*Lindsaea linearis* Sw.

**Ophioglossaceae**

# *Ophioglossum lusitanicum* L.

**Selaginellaceae**

# *Selaginella gracillima* (Kunze) Spring ex Salomon

*Campylopus introflexus* (Hedw.) Brid.

**Ditrichaceae**

*Ceratodon purpureus* (Hedw.) Brid.

**Grimmiaceae**

*Grimmia pulvinata* (Hedw.) Hook.f. & Wilson var.

*africana* (Hedw.) Hook.f. & Wilson

**Hypnaceae**

*Hypnum cupressiforme* Hedw.

**Lembophyllaceae**

*Lembophyllum clandestinum* (Hook.f. & Wilson)

Lindb. ex Paris

*Weymouthia cochlearifolia* (Schwägr.) Dixon

**Orthotrichaceae**

*Macrocoma tenuis* (Hook. & Grev.) Vitt subsp. *tenuis*

*Zygodon minutus* Müll.Hal. & Hampe

**Polytrichaceae**

*Polytrichum juniperinum* Hedw.

**Pottiaceae**

*Barbula calycina* Schwägr.

*Barbula crinita* Schultz

*Didymodon torquatus* (Taylor) Catches.

*Syntrichia antarctica* (Hampe) R.H.Zander

*Syntrichia papillosa* (Wilson) Jur.

*Tortella* sp.

*Tortula muralis* Hedw.

*Triquetrella papillata* (Hook.f. & Wilson) Broth.

*Weissia* sp.

**Racopilaceae**

*Racopilum cuspidigerum* (Schwägr.) Ångstr. var.

*convolutaceum* (Müll.Hal.) Zanten & Dijkstra

**Sematophyllaceae**

*Sematophyllum homomallum* (Hampe) Broth.

**Thuidiaceae**

*Thuidiopsis furfurosa* (Hook.f. & Wilson) M.Fleisch.

*Thuidiopsis sparsa* (Hook.f. & Wilson) Broth.

Appendix 1.2: Bryophytes of Musselroe Wind Farm

**MOSSES**

**Amblystegiaceae**

*Campylium polygamum* (Schimp.) C.E.O.Jensen

**Archidiaceae**

*Archidium stellatum* I.G.Stone

**Brachytheciaceae**

*Eurhynchium praelongum* (Hedw.) Bruch & Schimp.

*Rhynchostegium tenuifolium* (Hedw.) Reichardt

**Bryaceae**

i *Brachymenium preissianum* (Hampe) A.Jaeger

*Bryum dichotomum* Hedw.

*Bryum* sp.

*Orthodontium lineare* Schwägr.

*Rosulabryum capillare* (Hedw.) J.R.Spence

*Rosulabryum subtomentosum* (Hampe) J.R.Spence

**Dicranaceae**

*Campylopus bicolor* (Müll.Hal.) Wilson

**LIVERWORTS**

**Acrobolbaceae**

*Lethocolea pansa* (Taylor) G.A.M.Scott & K.G.Beckm.

**Aytoniaceae**

*Asterella drummondii* (Hook.f. & Taylor) R.M.Schust. ex D.G.Long

**Frullaniaceae**

*Frullania falciloba* Taylor ex Lehm.

**Geocalycaceae**

*Chiloscyphus semiteres* (Lehm.) Lehm. & Lindenb.

**Lejeuneaceae**

*Siphonolejeunea nudipes* (Hook.f. & Taylor) Herzog

**Marchantiaceae**

*Marchantia berteriana* Lehm. & Lindenb.

**Metzgeriaceae**

*Metzgeria furcata* (L.) Dumort

### Appendix 1.3: Lichens of Musselroe Wind Farm

- Amandinea australasica* Blaha, H.Mayrhofer & Elix  
*Amandinea coniops* (Wahlenb.) M.Choisy ex Scheid. & H.Mayrhofer
- + *Amandinea conranensis* Elix & P.M.McCarthy  
*Amandinea decedens* (Nyl.) Blaha & H.Mayrhofer  
*Amandinea punctata* (Hoffm.) Coppins & Scheid.  
*Anisomeridium disjunctum* P.M.McCarthy & Kantvilas  
*Anisomeridium polypori* (Ellis & Everh.) M.E.Barr
- + *Arthothelium endoaurantiacum* Makhija & Patw.  
*Arthothelium ampliatum* (C.Knight & Mitt.) Müll. Arg.
- Austroparmelina conlabrosa* (Hale) A.Crespo, Divakar & Elix
- + *Austroparmelina corrugativa* (Kurok. & Filson) Elix & Kantvilas  
*Austroparmelina pseudorelicina* (Jatta) A.Crespo, Divakar & Elix
- + *Bacidia laurocerasi* (Delise ex Duby) Zahlbr.  
*Bacidia septosior* (Nyl.) Zahlbr.  
*Bacidia stenospora* C.Knight  
*Bacidia wellingtonii* (Stirt.) D.J.Galloway  
*Bactrospora paludicola* Kantvilas  
*Buellia aeruginosa* A.Nordin, Owe-Larsson & Elix  
*Buellia amandineaeformis* Elix & Kantvilas  
*Buellia dissa* (Stirt.) Zahlbr.
- + *Buellia extenuatella* Elix & Kantvilas  
*Buellia halonioides* Elix  
*Buellia homophylia* (C.Knight) Zahlbr.  
*Buellia schaeferi* De Not.  
*Buellia stellulata* (Taylor) Mudd var. *stellulata*  
*Buellia stellulata* (Taylor) Mudd var. *tasmanica* Elix & Kantvilas  
*Buellia suttonensis* Elix & A.Knight  
*Caloplaca bartlettii* S.Y.Kondr. & Kärnefelt  
*Caloplaca beagleholei* S.Y.Kondr. & Kärnefelt  
*Caloplaca bermaguiana* S.Y.Kondr. & Kärnefelt  
*Caloplaca* cf. *chrysojeta* (Vain. ex Räsänen) Domb.  
*Caloplaca cinnabarina* (Ach.) Zahlbr.  
*Caloplaca cranfieldii* S.Y.Kondr. & Kärnefelt  
*Caloplaca eos* S.Y.Kondr. & Kärnefelt  
*Caloplaca ferdinandmuelleri* S.Y.Kondr. & Kärnefelt  
*Caloplaca gallowayi* S.Y.Kondr., Kärnefelt & Filson  
*Caloplaca holocarpa* (Hoffm.) A.E.Wade aggr.  
*Caloplaca* cf. *irrubescens* (Nyl.) Zahlbr.  
*Caloplaca jackelxii* S.Y.Kondr., Kärnefelt & A.Thell  
*Caloplaca kilcundaensis* S.Y.Kondr. & Kärnefelt  
*Caloplaca lateritia* (Taylor) Zahlbr.  
*Caloplaca maccarthyi* S.Y.Kondr., Kärnefelt & Elix  
*Caloplaca pulcherrima* (Müll.Arg.) S.Y.Kondr. & Kärnefelt  
*Caloplaca sublobulata* (Nyl.) Zahlbr.  
*Caloplaca tomareana* S.Y.Kondr. & Kärnefelt  
*Candelariella vitellina* (Hoffm.) Müll.Arg.  
*Candelariella xanthostigmoides* (Müll.Arg.) R.W.Rogers
- Catillaria austrolittoralis* Kantvilas & van den Boom
- + *Catinaria atropurpurea* (Schaer.) Vezda & Poelt  
*Chrysothrix xanthina* (Vain.) Kalb  
*Cladia aggregata* (Sw.) Nyl.  
*Cladia inflata* (F.Wilson) D.J.Galloway  
*Cladia retipora* (Labill.) Nyl.  
*Cladia sullivanii* (Müll.Arg.) W.Martin  
*Cladonia capitellata* (Hook.f. & Taylor) C.Bab. var. *squamatica* A.W.Archer  
*Cladonia humilis* (With.) J.R.Laundon var. *humilis*  
*Cladonia krempelhuberi* (Vain.) Zahlbr.  
*Cladonia merochlorophaea* Asahina  
*Cladonia neozelandica* Vain. var. *striata* (A.W.Archer) Kantvilas  
*Cladonia ochrochlora* Flörke  
*Cladonia praetermissa* A.W.Archer var. *praetermissa*  
*Cliostomum griffithii* (Sm.) Coppins  
*Coenogonium luteum* (Dicks.) Kalb & Lücking
- + *Collema crispum* (Huds.) Weber ex F.H.Wigg.  
*Collema glaucophthalmum* Nyl. var. *glaucophthalmum*  
*Collema glaucophthalmum* Nyl. var. *implicatum* (Nyl.) Degel.  
*Diploicia canescens* (Dicks.) A.Massal. subsp. *canescens*
- + *Diploschistes euganeus* (A.Massal.) J.Steiner
- + *Diploschistes gyrophoricus* Lumbsch & Elix
- + *Endocarpon crassisporum* P.M.McCarthy & Filson  
*Eugeniella farinosa* P.M.McCarthy & Elix  
*Flavoparmelia haysomii* (C.W.Dodge) Hale  
*Flavoparmelia rutidota* (Hook.f. & Taylor) Hale  
*Flavoparmelia soledians* (Nyl.) Hale
- + *Gyalecta pellucida* (Coppins & Malcolm) Baloch & Lücking  
*Halecania subsquamosa* (Müll.Arg.) van den Boom & H.Mayrhofer  
*Halegrapha mucronata* (Stirt.) Lücking  
*Herteliidea pseudobotryosa* R.C.Harris, Ladd & Printzen  
*Heterodea muelleri* (Hampe) Nyl.  
*Heterodermia obscurata* (Nyl.) Trevis.  
*Heterodermia tremulans* (Müll.Arg.) W.L.Culb.  
*Hyperphyscia adglutinata* (Flörke) H.Mayrhofer & Poelt  
*Hypotrachyna revoluta* (Flörke) Hale  
*Japewiella pruinosula* (Müll.Arg.) Kantvilas  
*Lecanora casuarinophila* Lumbsch  
*Lecanora dispersa* (Pers.) Sommerf.  
*Lecanora* aff. *farinacea* Fée  
*Lecanora farinacea* Fée  
*Lecanora flavopallida* Stirt.  
*Lecanora galactiniza* Nyl.  
*Lecanora mobergiana* Lumbsch & Elix
- + *Lecanora pseudogangaleoides* Lumbsch subsp. *pseudogangaleoides*  
*Lecanora saligna* (Schrad.) Zahlbr.
- + *Lecanora strobilina* (Spreng.) Kieff.  
*Lecanora subcoarctata* (C.Knight) Hertel  
*Lecanora subtecta* (Stirt.) Kantvilas & LaGreca  
*Lecanora symmicta* (Ach.) Ach.  
*Lecanora wilsonii* Müll.Arg. subsp. *wilsonii*

- Lecidella granulosa* (Nyl.) Knoph & Leuckert var. *granulosa*  
*Lecidella leptolomoides* (Müll.Arg.) Elix  
*Lecidella sublaticida* (C.Knight) Hertel  
*Lecidella xylogena* (Müll.Arg.) Kantvilas & Elix  
*Leimonis erratica* (Körb.) R.C.Harris & Lendemer  
*Leptra dactylinella* (Kantvilas & Elix) A.W.Archer & Elix  
*Leptogium crispatellum* Nyl.  
*Lichina intermedia* (C.Bab.) M.Schultz  
*Maronea constans* (Nyl.) Hepp  
*Megalaria laureri* (Hepp ex Th.Fr.) Hafellner  
*Megalaria melaloma* (C.Knight) Kantvilas  
*Megalaria melanotropa* (Nyl.) D.J.Galloway  
*Menegazzia caesiopruinosa* P.James  
*Menegazzia subpertusa* P.James & D.J.Galloway  
*Micarea almbornii* Coppins  
*Micarea byssacea* (Th.Fr.) Czarnota, Guzow-Krzem. & Coppins  
*Micarea melaenida* (Nyl.) Coppins  
*Monerolechia badia* (Fr.) Kalb  
*Notoparmelia signifera* (Nyl.) A.Crespo, Ferencova & Divakar  
*Ocellomma rediuntum* (Hasse) Kantvilas & Gueidan  
*Ochrolechia africana* Vain.  
*Ochrolechia apiculata* Verseghy  
*Ochrolechia gyrophorica* (A.W.Archer) A.W.Archer & Lumbsch  
*Opegrapha* sp. (GK 285/18; HO 595582)  
*Opegrapha atra* Pers.  
+ *Opegrapha niveoatra* (Borrer) J.R.Laundon  
+ *Opegrapha spodopolia* Nyl.  
+ *Opegrapha varia* Pers.  
*Pannaria elixii* P.M.Jørg. & D.J.Galloway  
*Paraporpidia* aff. *glauca* (Taylor) Rambold  
*Paraporpidia leptocarpa* (C.Bab. & Mitt.) Rambold & Hertel  
*Parmotrema neopustulatum* Kurok.  
*Parmotrema ochrocrinitum* Elix & J.Johnst.  
*Parmotrema perlatum* (Huds.) M.Choisy  
*Parmotrema reticulatum* (Taylor) M.Choisy  
*Pertusaria crassilabra* Müll.Arg.  
*Pertusaria lophocarpa* Körb.  
*Pertusaria pertractata* Stirt.  
*Physcia albata* (F.Wilson) Hale  
*Physcia austrocaesia* Elix  
+ *Physcia austrostellaris* Elix  
*Physcia neonubila* Elix  
*Physcia poncinsii* Hue  
*Placidium squamulosum* (Ach.) Breuss  
*Porina corrugata* Müll.Arg.  
*Porina elegantula* Müll.Arg.  
*Porina meridionalis* P.M.McCarthy  
*Porina raphidiophora* (Nyl.) Müll.Arg.  
*Porina subargillacea* Müll.Arg.  
*Porpidia crustulata* (Ach.) Hertel & Knoph  
*Punctelia borrieri* (Sm.) Krog  
*Punctelia pseudocoralloidea* (Gyeln.) Elix & Kantvilas  
*Ramalina caespitella* G.N.Stevens  
*Ramalina canariensis* J.Steiner  
*Ramalina celastri* (Spreng.) Krog & Swinscow  
*Ramalina fissa* (Müll.Arg.) Vain.  
*Ramalina inflata* (Hook.f. & Taylor) Hook.f. & Taylor  
*Ramboldia* sp. (GK 242/19)  
*Ramboldia blastidiata* Kantvilas & Elix  
*Ramboldia laeta* (Stirt.) Kalb, Lumbsch & Elix  
*Ramboldia petraeoides* (Nyl. ex C.Bab. & Mitt.) Kantvilas & Elix  
*Ramboldia stuartii* (Hampe) Kantvilas & Elix  
+ *Ramonia absconsa* (Tuck.) Vezda  
*Rhizocarpon geographicum* (L.) DC.  
*Rhizocarpon reductum* Th.Fr.  
*Rinodina asperata* (Shirley) Kantvilas  
*Rinodina australiensis* Müll.Arg.  
*Rinodina blastidiata* Matzer & H.Mayrhofer  
*Rinodina oleae* Bagl.  
*Rinodinella fertilis* (Körb.) Elix var. *fertilis*  
*Schismatomma occultum* (C.Knight & Mitt.) Zahlbr.  
*Teloschistes chrysophthalmus* (L.) Th.Fr.  
*Teloschistes spinosus* (Hook.f. & Taylor) J.S.Murray  
*Teloschistes velifer* F.Wilson  
*Tephromela alectoronica* Kalb  
*Tephromela atra* (Huds.) Hafellner  
*Thelenella tasmanica* H.Mayrhofer & P.M.McCarthy  
*Toninia aromatica* (Sm.) A.Massal.  
*Trapelia* sp. (GK 226/19)  
+ *Trapelia concentrica* Elix & P.M.McCarthy  
*Tylothallia verrucosa* (Müll.Arg.) Kantvilas  
*Usnea cornuta* Körb.  
*Usnea rubrotincta* Stirt.  
*Usnea torulosa* (Müll.Arg.) Zahlbr.  
*Verrucaria muralis* Ach.  
*Xanthoparmelia australasica* D.J.Galloway  
*Xanthoparmelia bungendorensis* (Elix) Elix & J.Johnst.  
*Xanthoparmelia conranensis* (Elix) Elix  
*Xanthoparmelia digitiformis* (Elix & P.M.Armstr.) Filson  
*Xanthoparmelia elixii* Filson  
*Xanthoparmelia filsonii* Elix & J.Johnst.  
*Xanthoparmelia flavescensireagens* (Gyeln.) D.J.Galloway  
*Xanthoparmelia microcephala* Elix & Kantvilas  
*Xanthoparmelia microphyllizans* Elix  
*Xanthoparmelia mougeotina* (Nyl.) D.J.Galloway  
*Xanthoparmelia neotinctina* (Elix) Elix & J.Johnst.  
*Xanthoparmelia streimannii* (Elix & P.M.Armstr.) Elix & J.Johnst.  
*Xanthoparmelia subprolixa* (Nyl. ex Kremp.) O.Blanco *et al.*  
*Xanthoparmelia tasmanica* (Hook.f. & Taylor) Hale  
*Xanthoparmelia verisidiosa* (Essl.) O.Blanco *et al.*  
*Xanthoparmelia xanthomelaena* (Müll.Arg.) Hale  
+ *Xanthoparmelia xerica* (Elix) Elix  
*Xanthoria* sp. (GK 394/18)  
*Xanthoria angustata* S.Y.Kondr. & Karnefelt  
*Xanthoria coomae* S.Y.Kondr. & Karnefelt  
*Xanthoria elixii* S.Y.Kondr. & Karnefelt  
*Xanthoria ligulata* (Körb.) P.James



## Appendix 1.4: Invertebrate taxa of Musselroe Wind Farm

### ARTHROPODS

#### ARCHAEOGNATHA

##### Meinertellidae

*Machiloides hickmani* Womersley, 1939

#### BLATTODEA

##### Blaberidae

*Calolampra irrorata* (Fabricius, 1775)

##### Blattidae

- + Blattidae unplaced sp. TMAG\_F95715
- Drymaplaneta* cf. *communis* Tepper, 1893
- Platyzosteria biglumis* (Saussure, 1864)

#### COLEOPTERA

##### Anamorphidae

- + *Idiophyes* sp. TMAG\_F98611

##### Anthicidae

- Anthicidae unplaced sp. TMAG\_F95636
- Anthicidae unplaced sp. TMAG\_F98784
- Anthicidae unplaced sp. TMAG\_F98926
- Lagrioida australis* Champion, 1895
- Mecynotarsus leai* Pic, 1942
- Trichananca victoriensis* Blackburn, 1891

##### Anthribidae

- Anthribidae unplaced TFIC sp. 04
- Araecerus palmaris* (Pascoe, 1882)

##### Belidae

- Pachyura australis* Hope, 1834
- Rhinotia bidentata* (Donovan, 1805)
- Stenobelus tibialis* (Blackburn, 1893)

##### Buprestidae

- Germanica lilliputana* (Thomson, 1879)
- Melobasis innocua* Thomson, 1879
- Melobasis nervosa* (Boisduval, 1835)

##### Cantharidae

- Chauliognathus lugubris* (Fabricius, 1801)
- Chauliognathus tricolor* (Castelnau, 1840)
- Heteromastix* unplaced

##### Carabidae

- Amblytelus brevis* Blackburn, 1892
- Bembidion proprium* Blackburn, 1888
- Carabidae unplaced sp. TMAG\_F95840
- Carabidae unplaced sp. TMAG\_F97712
- Carabidae unplaced sp. TMAG\_F1148372
- Clivina vagans* Putzeys, 1866
- Clivina vittata* Sloane, 1896
- Demetrída* sp. TMAG\_F98712
- Hypharpax peronii* (Castelnau, 1867)
- Loxandrus* sp. TMAG\_F95857
- Notonomus politulus* (Chaudoir, 1865)
- Philophlaeus simsoni* Sloane, 1920
- Prosopognmus chalybeipennis* (Chaudoir, 1843)
- Pseudoceneus sollicitus* (Erichson, 1842)
- Sarothrocrepis integra* Baehr, 2018
- Scaraphites rotundipennis* (Dejean, 1825)
- Scopodes* sp. TMAG\_F96081

##### Cerambycidae

- Ancita crocogaster* (Boisduval, 1835)

*Ancita marginicollis* (Boisduval, 1835)

*Bethelium diversicorne* (White, 1846)

Callidiopini unplaced sp. TMAG\_F100860

Callidiopini unplaced sp. TMAG\_F33390

Cerambycinae unplaced sp. TMAG\_F96396

*Enchoptera apicalis* Saunders, 1850

*Hesthesis cingulatus* (Kirby, 1818)

*Neissa inconspicua* Pascoe, 1866

*Nenenia* sp. TMAG\_F98558

*Stenoderus suturalis* (Olivier, 1795)

*Uracanthus* sp. TMAG\_F95575

##### Chrysomelidae

*Agetinus subcostata* (Chapuis, 1874)

*Aporocera viridipennis* (Saunders, 1842)

*Arsipoda* sp. TMAG\_F98512

*Chaetocnema* sp. TMAG\_F95720

*Ditropidus* unplaced

*Euryspa albipennis* (Germar, 1848)

*Geloptera jugularis* (Erichson, 1842)

*Geloptera* sp. TMAG\_F41254

*Monolepta* unplaced

*Paropsis charybdis* Stål, 1860

*Paropsis porosa* Erichson, 1842

*Paropsisterna nobilitata* (Erichson, 1842)

*Paropsisterna oblitterata* (Erichson, 1842)

*Pelioschema* unplaced

+i *Psylliodes marcida* (Illiger, 1807)

##### Cleridae

*Blackburniella intricata* (Blackburn, 1891)

*Eleale simplex* (Newman, 1840)

*Eunatalis porcata* (Fabricius, 1787)

*Lemidia cicatricosa* Lea, 1907

*Lemidia* sp. TMAG\_F98680

*Lemidia subaenea* Gorham, 1877

i? *Necrobia rufipes* (DeGeer, 1775)

*Neoscrobiger* sp. TMAG\_F95985

##### Coccinellidae

*Cleobora mellyi* (Mulsant, 1850)

*Coccinella transversalis* Fabricius, 1781

i *Coccinella undecimpunctata* Linnaeus, 1758

Coccinellidae unplaced sp. TMAG\_F98853

Coccinellidae unplaced TFIC sp. 22

*Harmonia conformis* (Boisduval, 1835)

*Micraspis frenata* (Erichson, 1842)

*Rhyzobius hirtellus* Crotch, 1874

*Rhyzobius* sp. TMAG\_F98708

*Rhyzobius pelion* Tomaszewska, 2010

*Rhyzobius* TFIC sp. 05

*Rhyzobius* TFIC sp. 15

*Rhyzobius* TFIC sp. 35

*Rhyzobius ventralis* (Erichson, 1842)

##### Corylophidae

*Holopsis* unplaced

*Sericoderus* TFIC sp. 05

##### Curculionidae

*Aades cultratus* (Fabricius, 1775)

*Aoplocnemis* unplaced

*Aphela algarum* Pascoe, 1870

*Aphela helopoides* Pascoe, 1865

- Cnestus pseudosolidus* (Schedl, 1936)  
 Cryptorhynchini unplaced sp. TMAG\_F95457  
 Cryptorhynchini unplaced sp. TMAG\_F95499  
 Curculionidae unplaced sp. TMAG\_F58817  
 Curculionidae unplaced sp. TMAG\_F95604  
 Curculionidae unplaced sp. TMAG\_F96050  
 Curculionidae unplaced sp. TMAG\_F98766  
 Curculionidae unplaced sp. TMAG\_F98811  
*Epamoebus ziczac* Lea, 1909  
*Ethemaia sellata* Pascoe, 1865  
*Gerymassa picticornis* Blackburn, 1893  
*Gonipterus* unplaced  
*Haplonyx casuarinae* (Lea, 1909)  
 Leptopiini unplaced sp. TMAG\_F41329  
 Leptopiini unplaced sp. TMAG\_F95510  
 Leptopiini unplaced sp. TMAG\_F95890  
 Leptopiini unplaced sp. TMAG\_F96210  
 Leptopiini unplaced sp. TMAG\_F98700  
*Leptopius duponti* (Boisduval, 1835)  
*Mandalotus* TFIC sp. 14  
*Melanterius acaciae* Lea, 1899  
*Merimnetes oblongus* (Blanchard, 1853)  
*Meriphus* sp. TMAG\_F96628  
*Neolaemosaccus narinus* (Pascoe, 1872)  
*Neolaemosaccus* sp. TMAG\_F96154  
*Orthorhinus klugii* Boheman, 1835  
*Orthorhinus* TFIC sp. 02  
*Pelororhinus margaritaceus* Erichson, 1842  
*Pelororhinus* TFIC sp. 01  
*Pentamimus australis* (Erichson, 1842)  
*Pseudotimareta subterranea* (Lea, 1908)  
*Rhamphus acaciae* Lea, 1895  
*Sclerorhinus bubalus* (Olivier, 1807)  
*Scotasmus litoralis* (Lea, 1911)  
*Storeus albosignatus* (Blackburn, 1890)  
*Storeus* sp. TMAG\_F98972  
 Tychiini unplaced TFIC sp. 18
- Dermestidae**  
 i?+*Attagenus pellio* (Linnaeus, 1758)  
*Trogoderma* TFIC sp. 01
- Dytiscidae**  
*Antiporus* sp. TMAG\_F97815  
*Chostonectes* unplaced  
*Exocelina australiae* (Clark, 1863)  
*Lancetes lanceolatus* (Clark, 1863)  
*Limbodessus gemellus* (Clark, 1862)  
*Megaporus* unplaced  
*Necterosoma penicillatum* (Clark, 1862)  
*Onychohydus scutellaris* (Germer, 1848)  
*Platynectes* unplaced  
*Rhantus suturalis* (Macleay, 1825)  
*Sternopriscus tasmanicus* Sharp, 1882  
*Sternopriscus* sp. TMAG\_F97431
- Elateridae**  
*Agrypnus impresicollis* (Elston, 1924)  
*Agrypnus pictipennis* (Candèze, 1857)  
*Agrypnus* TFIC sp. 01  
*Conoderus erubescens* (Candèze, 1859)  
*Conoderus fabrilis* (Erichson, 1842)  
*Conoderus* TFIC sp. 03  
*Conoderus* TFIC sp. 11  
*Conoderus* TFIC sp. 12  
 Elateridae unplaced sp. TMAG\_F95495  
 Elateridae unplaced sp. TMAG\_F98582  
 Elateridae unplaced sp. TMAG\_F98981  
 Elateridae unplaced TFIC sp. 10  
 Elateridae unplaced TFIC sp. 32  
*Enischmelater specularis* (Candèze, 1889)  
*Paracardiophorus* sp. TMAG\_F95158  
*Paracardiophorus* sp. TMAG\_F95439
- Geotrupidae**  
 i *Geotrupes spiniger* Marsham, 1802
- Histeridae**  
*Saprinus laetus* Erichson, 1834  
*Teretrius sorellensis* Blackburn, 1903
- Hybosoridae**  
 + *Liparochrus* sp. TMAG\_F95801
- Hydraenidae**  
 + *Gymnochthebius* sp. TMAG\_F96374
- Hydrophilidae**  
*Berosus* unplaced  
*Cercyon* sp. TMAG\_F96383  
*Enochrus* sp. TMAG\_F94420  
*Hydrophilus latipalpus* Castelnau, 1840  
*Limnoxenus zealandicus* (Broun, 1880)  
*Paracymus* unplaced
- Hygrobiidae**  
*Hygrobia australasiae* (Clark, 1862)
- Latridiidae**  
*Corticicara* TFIC sp. 02
- Leiodidae**  
*Choleva* TFIC sp. 01  
*Eublackburniella* sp. TMAG\_F41310  
 Leiodidae unplaced sp. TMAG\_F41346  
*Zeadolopus* unplaced
- Lucanidae**  
*Syndesus cornutus* (Fabricius, 1801)
- Lycidae**  
*Xylobanus simplicicornis* (Lea, 1909)
- Meloidae**  
*Palaestra cyanipennis* (Pascoe, 1860)
- Melyridae**  
*Dicranolaius cinctus* (Redtenbacher, 1867)  
*Hypattalus exilis* Lea, 1909  
 Melyridae unplaced sp. TMAG\_F98714  
 Melyridae unplaced sp. TMAG\_F98715
- Mordellidae**  
*Glipostenoda* TFIC sp. 09  
*Mordella promiscua* Erichson, 1842  
 Mordellidae unplaced sp. TMAG\_F98627
- Nitidulidae**  
*Epuraea meyricki* (Blackburn, 1891)
- Phalacridae**  
*Austroporus melas* (Lea, 1932)  
 Phalacridae unplaced sp. TMAG\_F44443
- Phycosecidae**  
*Phycosecis litoralis* Pascoe, 1875



**Ptinidae**

- Deltocryptus* sp. TMAG\_F98780  
 Ptinidae unplaced sp. TMAG\_F98630  
 Ptinidae unplaced sp. TMAG\_F98874  
*Ptinus exulans* Erichson, 1842

**Rhipiceridae**

- Rhipicera femorata* Kirby, 1818

**Salpingidae**

- Orphanotrophium* TFIC sp. 01

**Scarabaeidae**

- Adoryphorus coulonii* (Burmeister, 1847)  
 i *Aphodius lividus* (Olivier, 1789)  
*Aplopsis evexa* (Britton, 1957)  
*Atenius brouni* (Sharp, 1876)  
*Automolius depressus* (Blanchard, 1850)  
*Cheiroplatys latipes* (Guérin-Méneville, 1831)  
*Diphucephala colaspoides* (Gyllenhal, 1817)  
*Diphucephala smaragdula* Boisduval, 1835  
*Heteronyx cervina* (Boisduval, 1835)  
*Heteronyx pilosellus* Blanchard, 1850  
*Heteronyx tasmanicus* Blackburn, 1909  
*Liparetrus discipennis* Guérin-Méneville, 1831  
*Liparetrus sericeus* Macleay, 1871  
 Melolonthinae unplaced sp. TMAG\_F95945  
 Melolonthinae unplaced sp. TMAG\_F98770  
*Onthophagus fuliginosus* Erichson, 1842  
*Onthophagus posticus* Erichson, 1842  
*Onthophagus pronus* Erichson, 1842  
*Onthophagus* sp. TMAG\_F97557  
*Phyllotocus macleayi* Fischer, 1823  
*Phyllotocus rufipennis* (Boisduval, 1835)  
*Sericesthis nigrolineata* Boisduval, 1835

**Scirtidae**

- Spilotocyphon spilotus* (Blackburn, 1892)

**Scraptiidae**

- Scraptia laticollis* Champion, 1895

**Silphidae**

- Promaphila lacrymosa* (Schreibers, 1802)

**Staphylinidae**

- Aleochara blackburni* Bernhauer & Scheerpeltz, 1926  
 Aleocharinae unplaced sp. TMAG\_F41202  
*Bledius aterrimus* Fauvel, 1877  
*Cafius australis* (L. Redtenbacher, 1868)  
*Cafius sabulosus* Fauvel, 1877  
*Cafius seriatus* Fauvel, 1877  
*Creophilus erythrocephalus* (Fabricius, 1775)  
*Paederus cruenticollis* Germar, 1848  
*Quedius* sp. TMAG\_F98639  
 Staphylininae unplaced sp. TMAG\_F96390

**Tenebrionidae**

- Adelium brevicorne* Blessig, 1861  
*Adelium tenebroides* Erichson, 1842  
*Atoichus bicolor* (Blackburn, 1893)  
*Bassianus colydioides* (Erichson, 1842)  
*Ecnolagria rufescens* (Boisduval, 1835)  
*Edylius canescens* Champion, 1894  
*Hyocis bakewelli* Pascoe, 1866  
*Isopteron aversum* (Pascoe, 1869)  
*Isopteron triviale* (Erichson, 1842)

- Meneristes australis* (Boisduval, 1835)  
*Nocar depressusculus* (Macleay, 1872)  
*Pachycoelia sulcicollis* Boisduval, 1835  
*Pemanoa tasmanica* (Carter, 1915)  
*Pterohelaeus peltatus* (Erichson, 1842)  
*Saragus costatus* (Solier, 1848)  
*Sphargeris physodes* Pascoe, 1860  
 Tenebrionidae unplaced sp. TMAG\_F95884  
*Tetragonomenes ruficornis* (Champion, 1894)  
*Titaena columbina* Erichson, 1842

**Throscidae**

- + Throscidae unplaced sp. TMAG\_F98854

**Trogidae**

- Omorgus australasiae* (Erichson, 1842)

**Trogossitidae**

- Leperina decorata* (Erichson, 1842)

**DERMAPTERA****Anisolabididae**

- Euborellia brunneri* (Dohrn, 1864)  
*Gonolabis* unplaced

**Labiduridae**

- Labidura riparia* (Pallas, 1773)

**DIPTERA****Acroceridae**

- + *Ogcodes* sp. TMAG\_F95695

**Asilidae**

- Bathypogon nigrinus* Ricardo, 1912  
*Cerdistus caliginosus* (White, 1914)  
*Cerdistus flavicinctus* (White, 1914)  
*Cerdistus vittipes* (Macquart, 1847)  
*Leptogaster* sp. TMAG\_F98958  
*Neoaratus hercules* (Wiedemann, 1828)  
*Neoscleropogon* unplaced

**Australimyziidae**

- Australimyza mcalpinei* Brake & Mathis, 2007

**Bibionidae**

- Dilophus* unplaced

**Bombyliidae**

- Acridophagus paganicus* (White, 1916)  
*Aleucosia atherix* (Newman, 1841)  
*Aleucosia calophthalma* (Thomson, 1869)  
*Comptosia ocellata* (Newman, 1841)  
*Exechohypopion nigricostatum* (Macquart, 1850)  
*Exechohypopion velox* (White, 1916)  
*Meomyia fasciculata* (Macquart, 1840)  
*Villa fuscicostata* (Macquart, 1846)

**Calliphoridae**

- Calliphora hilli* Patton, 1925  
*Calliphora stygia* (Fabricius, 1782)  
 Calliphoridae unplaced sp. TMAG\_F97634  
 Calliphorinae unplaced sp. TMAG\_F99027  
*Onesia* sp. TMAG\_F98547

**Canacidae**

- Canacidae unplaced sp. TMAG\_F41340  
 Canacidae unplaced sp. TMAG\_F41341

**Chamaemyiidae**

- Chamaemyiidae unplaced sp. TMAG\_F96118

**Chironomidae**

- Chironomidae unplaced sp. TMAG\_F41374

- Chironomidae unplaced sp. TMAG\_F95551  
 Chironomidae unplaced sp. TMAG\_F96041  
 Chironomidae unplaced sp. TMAG\_F96042
- Chloropidae**  
*Apotropina ornatipennis* (Malloch, 1923)  
 Chloropidae unplaced sp. TMAG\_F96424  
 Chloropidae unplaced sp. TMAG\_F98232  
*Pemphigonotus* sp. TMAG\_F97691
- Coelopidae**  
*Amma blancheae* McAlpine, 1991  
*Chaetocoelopa sydneyensis* (Schiner, 1868)  
*Gluma musgravei* McAlpine, 1991  
*Gluma nitida* McAlpine, 1991  
*Rhis whitleyi* McAlpine, 1991
- Dolichopodidae**  
 Dolichopodidae unplaced sp. TMAG\_F41283  
 Dolichopodidae unplaced sp. TMAG\_F41365  
 Dolichopodidae unplaced sp. TMAG\_F115776  
 Dolichopodidae unplaced sp. TMAG\_F97581  
*Heteropsilopus cingulipes* (Walker, 1835)  
 Hydrophorinae unplaced sp. TMAG\_F57575  
 Sciapodinae unplaced sp. TMAG\_F97453
- Empididae**  
 Empididae unplaced sp. TMAG\_F40378  
 Empididae unplaced sp. TMAG\_F41210  
 Empididae unplaced sp. TMAG\_F41274  
 Empididae unplaced sp. TMAG\_F41359  
 Empididae unplaced sp. TMAG\_F41360
- Ephydriidae**  
*Ephydrella* unplaced  
 + Ephydriidae unplaced sp. TMAG\_F95706  
 Ephydriidae unplaced sp. TMAG\_F98245  
*Hydrellia tritici* Coquillett, 1903  
*Scatella* sp. TMAG\_F59706
- Heteromyzidae**  
*Diplogeomyza wirthi* McAlpine, 1967
- Hybotidae**  
 Hybotidae unplaced sp. TMAG\_F96039
- Lauxaniidae**  
 Lauxaniidae unplaced sp. TMAG\_F41248  
 Lauxaniidae unplaced sp. TMAG\_F96423  
*Paranomina unicolor* Hendel, 1907  
*Sapromyza mallochiana* Evenhuis & Okadome, 1989
- Limoniidae**  
*Gynoplistia* sp. TMAG\_F95911  
 Limoniidae unplaced sp. TMAG\_F96199
- Lonchaeidae**  
 Lonchaeidae unplaced sp. TMAG\_F6351
- Muscidae**  
*Coenosia* sp. TMAG\_F47332  
*Helina* sp. TMAG\_F12791  
*Lispe cana* (Walker, 1849)  
 Muscidae unplaced sp. TMAG\_F41290  
 Muscidae unplaced sp. TMAG\_F41370  
 Muscidae unplaced sp. TMAG\_F99028
- Mycetophilidae**  
 Mycetophilidae unplaced sp. TMAG\_F41206
- Nemestrinidae**  
*Trichophthalma punctata* (Macquart, 1846)
- Piophilidae**  
 Piophilidae unplaced sp. TMAG\_F41358
- Platystomatidae**  
*Duomyia decora* (Macquart, 1846)  
*Lamprogaster laeta* (Macquart, 1835)  
*Rivellia* unplaced
- Pyrgotidae**  
*Cardiacera* cf. *anthonyi* (Paramonov, 1958)  
*Cardiacera* sp. TMAG\_F95804
- Rhinophoridae**  
 + *Axinia* unplaced sp. TMAG\_F5984
- Sarcophagidae**  
*Oxysarcodexia varia* (Walker, 1836)  
*Protomiltogramma laticeps* Malloch, 1930  
*Sarcophaga* sp. TMAG\_F72915  
 Sarcophaginae unplaced sp. TMAG\_F96711
- Sciaridae**  
 Sciaridae unplaced sp. TMAG\_F41293  
 Sciaridae unplaced sp. TMAG\_F96040
- Sepsidae**  
*Parapalaeosepsis plebeia* (De Meijere, 1906)
- Simuliidae**  
 Simuliidae unplaced sp. TMAG\_F41364
- Sphaeroceridae**  
*Thoracochoeta* unplaced
- Stratiomyidae**  
*Inopus rubriceps* (Macquart, 1847)  
*Octarthria brunnipennis* (Fuller, 1934)  
*Odontomyia* sp. TMAG\_F96259
- Syrphidae**  
*Eumerus argyrogaster* Ferguson, 1926  
*Eumerus latipes* Macquart, 1846  
*Melangyna viridiceps* (Macquart, 1847)  
*Orthoprosopa grisea* (Walker, 1835)  
*Psilota coerulea* Macquart, 1846  
*Psilota femoralis* Schiner, 1868  
*Simosyrphus grandicornis* (Macquart, 1842)  
*Xanthandrus agrolas* (Walker, 1849)
- Tabanidae**  
*Dasybasis gentilis* (Erichson, 1842)  
*Dasybasis neocirrus* (Ricardo, 1917)  
*Dasybasis neolatifrons* (Ferguson & Hill, 1922)  
*Dasybasis* sp. TMAG\_F46925  
*Dasybasis* sp. TMAG\_F96260  
*Mackerrasus microdonta* (Macquart, 1847)  
*Scaptia auriflua* (Donovan, 1805)
- Tachinidae**  
*Chaetophthalmus similis* (Walker, 1853)  
*Microtropesa nigricornis* Macquart, 1851  
*Polychaeta* sp. TMAG\_F95700  
*Rutilia* sp. TMAG\_F96000  
*Rutilia* sp. TMAG\_F97587  
*Rutilia* sp. TMAG\_F97588  
*Rutilia* sp. TMAG\_F97671  
*Rutilia vivipara* (Fabricius, 1805)  
 Tachinidae unplaced sp. TMAG\_F95526  
 Tachinidae unplaced sp. TMAG\_F96034  
 Tachinidae unplaced sp. TMAG\_F96355  
 Tachinidae unplaced sp. TMAG\_F98551

Tachinidae unplaced sp. TMAG\_F98553  
 Tachinidae unplaced sp. TMAG\_F98650  
 Tachinidae unplaced sp. TMAG\_F98761  
*Tritaxys heterocera* (Macquart, 1846)

#### Tephritidae

*Austrotephritis bushi* (Hardy & Drew, 1996)  
*Sphenella ruficeps* (Macquart, 1851)  
*Trupanea prolata* Hardy & Drew, 1996

#### Therevidae

*Acraspisa* sp. TMAG\_F95917  
*Acupalpa* sp. TMAG\_F96343  
*Anabarhynchus fuscoapicatus* Lyneborg, 2001  
*Anabarhynchus maritimus* Hardy, 1916  
*Bonjeania segnis* (White, 1916)  
*Ectinorhynchus* sp. TMAG\_F47017  
*Evansomyia* sp. TMAG\_F41156

#### HEMIPTERA

##### Acanthosomatidae

Acanthosomatidae unplaced sp. TMAG\_F57832  
*Duadicus pallidus* Dallas, 1851  
*Elasmostethus* sp. TMAG\_F98349  
*Eupolemus* sp. TMAG\_F96017  
*Eupolemus* sp. TMAG\_F96098  
*Hiarchas* sp. TMAG\_F95667  
*Stauralia chloracantha* Dallas, 1851

##### Achilidae

*Argeleusa* sp. TMAG\_F57755

##### Alydidae

*Mutusca brevicornis* (Dallas, 1852)

##### Aradidae

*Prosympiestus* sp. TMAG\_F98259

##### Callipappidae

*Callipappus* unplaced

##### Cercopidae

*Bathyllus albicinctus* (Erichson, 1842)

##### Cicadellidae

Cicadellidae unplaced sp. TMAG\_F95683

##### Cicadidae

*Diemeniana euronotiana* (Kirkaldy, 1909)  
*Gelidea torrida* (Erichson, 1842)

##### Coreidae

*Agriopocoris* unplaced  
*Gelonus tasmanicus* (Le Guillou, 1841)

##### Corixidae

*Diaprepocoris barycephala* Kirkaldy, 1897  
*Sigara australis* (Fieber, 1851)  
*Sigara neboissi* Lansbury, 1970

##### Cydnidae

*Adrisa atra* (Dallas, 1851)  
*Adrisa* sp. TMAG\_F98735  
 Cydnidae unplaced sp. TMAG\_F96412  
*Macroscytus* sp. TMAG\_F6477

##### Enicocephalidae

*Oncyclocotis tasmanicus* (Westwood, 1837)

##### Flatidae

*Siphanta* cf. *hebes* (Walker, 1851)  
*Siphanta tasmanica* Fletcher, 1985

##### Gelastocoridae

*Nerthra* sp. TMAG\_F97681

##### Membracidae

*Acanthuchus trispinifer* (Fairmaire, 1846)  
*Ceraon tasmaniae* (Fairmaire, 1846)

##### Micronectidae

*Micronecta annae* Kirkaldy, 1905  
*Micronecta robusta* Hale, 1922

##### Miridae

Miridae unplaced sp. TMAG\_F41263  
 Miridae unplaced sp. TMAG\_F41342  
 Miridae unplaced sp. TMAG\_F57255  
 Miridae unplaced sp. TMAG\_F95673  
 Miridae unplaced sp. TMAG\_F95825  
 Miridae unplaced sp. TMAG\_F96013  
 Miridae unplaced sp. TMAG\_F96014  
 Miridae unplaced sp. TMAG\_F96106  
*Pseudopantilius australis* (Walker, 1873)

##### Notonectidae

*Anisops deanei* Brooks, 1951  
*Enithares woodwardi* Lansbury, 1968

##### Ochteridae

*Ochterus* unplaced

##### Pentatomidae

*Anaxilaua vesiculosus* (Herrich-Schäffer, 1840)  
*Buthumka* sp. TMAG\_F59527  
*Cuspicona stenuella* Walker, 1868  
*Diaphyta rosea* Bergroth, 1912  
*Dictyotus caenosus* (Westwood, 1837)  
*Eribotes hobartensis* Distant, 1910  
*Mycoolona atricornis* (Westwood, 1837)  
*Ocirrhoë unimaculata* (Westwood, 1837)  
*Oechalia schellenbergii* (Guérin, 1831)  
*Omyta centrolineata* (Westwood, 1837)  
*Oncocoris geniculatus* (Dallas, 1851)  
 Pentatomidae unplaced sp. TMAG\_F46979  
*Platycoris* sp. TMAG\_F95442

##### Piesmatidae

*Mcateella* sp. TMAG\_F47683

##### Psyllidae

Psyllidae unplaced sp. TMAG\_F103116  
 Psyllidae unplaced sp. TMAG\_F41260  
 Psyllidae unplaced sp. TMAG\_F41261

##### Pyrrhocoridae

*Dindymus versicolor* (Herrich-Schäffer, 1853)

##### Reduviidae

*Coranus trabeatus* Horváth, 1902  
*Gminatus australis* (Erichson, 1842)  
*Nyllius asperatus* Stål, 1859  
*Peirates fuliginosus* (Erichson, 1842)  
 Reduviidae unplaced sp. TMAG\_F96314  
 Reduviidae unplaced sp. TMAG\_F96443

##### Rhyparochromidae

*Brentiscerus putoni* (White, 1878)  
*Plinthisus woodwardi* Slater & Sweet, 1977  
 Rhyparochromidae unplaced sp. TMAG\_F95961  
 Rhyparochromidae unplaced sp. TMAG\_F98732  
 Rhyparochromidae unplaced sp. TMAG\_F98787



**HYMENOPTERA****Apidae**

- i *Apis mellifera* Linnaeus, 1758  
*Exoneura* unplaced

**Bethylidae**

- Bethylidae unplaced sp. TMAG\_F96401

**Braconidae**

- Braconidae unplaced sp. TMAG\_F95810  
Braconinae unplaced sp. TMAG\_F95643  
Braconinae unplaced sp. TMAG\_F95828

**Chalcididae**

- Chalcididae unplaced sp. TMAG\_F97622  
Chalcididae unplaced sp. TMAG\_F97623

**Chrysididae**

- Chrysididae unplaced sp. TMAG\_F98977

**Dryinidae**

- Dryinidae unplaced

**Colletidae**

- Callomelitta* sp. TMAG\_F3998  
*Euhesma maculifera* (Michener, 1965)  
*Euryglossa* sp. TMAG\_F96120  
*Leioproctus* sp. TMAG\_F3995  
*Leioproctus* sp. TMAG\_F95642  
*Leioproctus* sp. TMAG\_F97230  
*Pachyprosopis* sp. TMAG\_F96175  
*Perilampus* sp. TMAG\_F96179

**Crabronidae**

- Podagritys* sp. TMAG\_F13427  
*Podagritys* sp. TMAG\_F95864  
*Tachysphex* unplaced

**Eucharitidae**

- Eucharitidae unplaced sp. TMAG\_F99017

**Evaniidae**

- Acanthinevania* sp. TMAG\_F100787

**Formicidae**

- Amblyopone australis* Erichson, 1842  
*Anonychomyrma biconvexa* (Santschi, 1928)  
*Camponotus claripes* Mayr, 1876  
*Camponotus consobrinus* (Erichson, 1842)  
*Camponotus gasseri* (Forel, 1894)  
*Camponotus hartogi* Forel, 1902  
*Camponotus* sp. TMAG\_F96335  
*Camponotus terebrans* (Lowne, 1865)  
Formicidae unplaced sp. TMAG\_F98752  
*Iridomyrmex* sp. TMAG\_F101247  
*Myrmecia forficata* (Fabricius, 1787)  
*Myrmecia pilosula* Smith, 1858  
*Ochetellus* sp. TMAG\_F98800  
*Pheidole* unplaced  
*Polyrbachis patiens* Santschi, 1920  
*Polyrbachis* sp. TMAG\_F7097  
*Polyrbachis* sp. TMAG\_F95827  
*Rhytidoponera tasmaniensis* Emery, 1898

**Gasteruptiidae**

- Gasteruptiidae unplaced sp. TMAG\_F96406

**Halictidae**

- Halictidae unplaced sp. TMAG\_F4052  
Halictidae unplaced sp. TMAG\_F98518  
*Lasioglossum* sp. TMAG\_F4140

**Ichneumonidae**

- Ceratomansa* unplaced  
*Dusona* sp. TMAG\_F98948  
*Echthromorpha intricatoria* (Fabricius, 1804)  
*Eriostethus* unplaced  
*Habronyx* sp. TMAG\_F96407  
*Heteropelma* sp. TMAG\_F63139  
Ichneumonidae unplaced sp. TMAG\_F32289  
Ichneumonidae unplaced sp. TMAG\_F95586  
Ichneumonidae unplaced sp. TMAG\_F95829  
Ichneumonidae unplaced sp. TMAG\_F95868  
Ichneumonidae unplaced sp. TMAG\_F98739  
Ichneumonidae unplaced sp. TMAG\_F98944  
Ichneumonidae unplaced sp. TMAG\_F99011  
*Labena* sp. TMAG\_F72904  
*Netelia* unplaced  
Ophioninae unplaced sp. TMAG\_F31846  
*Stenarella victoriae* (Cameron, 1912)

**Mutillidae**

- Odontomyrme cordatiformis* Lelej, 1983

**Pompilidae**

- Ageniellini unplaced  
*Cryptocheilus australis* (Guérin-Méneville, 1838)  
Pompilidae unplaced sp. TMAG\_F59520  
Pompilidae unplaced sp. TMAG\_F97700  
Pompilidae unplaced sp. TMAG\_F98802  
Pompilidae unplaced sp. TMAG\_F98834  
Pompilidae unplaced sp. TMAG\_F98838  
Pompilidae unplaced sp. TMAG\_F99012  
Pompilidae unplaced sp. TMAG\_F99014  
*Psoropempula* sp. TMAG\_F57286  
*Sphictostethus* sp. TMAG\_F98745  
*Turneromyia* unplaced

**Sphecidae**

- Podalonia tydei* (Le Guillou, 1841)  
*Prionyx* unplaced

**Tiphiidae**

- Catocheilus apterus* (Olivier, 1811)  
*Diamma bicolor* Westwood, 1835  
*Lophocheilus villosus* Guérin-Méneville, 1842  
*Neozeleboria carinicolis* Turner, 1915  
*Neozeleboria volatilis* (Smith, 1859)  
*Rhagigaster scalae* (Dalla Torre, 1897)  
*Thynninae* unplaced sp. TMAG\_F95644  
*Thynninae* unplaced sp. TMAG\_F96172  
*Thynninae* unplaced sp. TMAG\_F96405  
*Thynninae* unplaced sp. TMAG\_F97084  
*Thynnoides mesopleuralis* Turner, 1912

**Vespididae**

- Paralastor* unplaced

**LEPIDOPTERA****Anthelidae**

- Anthela acuta* (Walker, 1855)  
*Anthela nicothoe* (Boisduval, 1832)  
*Anthela ocellata* (Walker, 1855)  
Munychryiinae unplaced

**Batrachedridae**

- + *Batrachedra* sp. TMAG\_F99720

**Cosmopterigidae**+ *Limnaecia* sp. TMAG\_F107740**Cossidae***Endoxyla lituratus* (Donovan, 1805)**Crambidae**

Crambidae unplaced

Crambinae unplaced

*Eudonia cleodorialis* (Walker, 1859)*Metasia capnochroa* (Meyrick, 1884)*Prothostola microphaellus* (Walker, 1866)

Pyraustinae unplaced

*Tipanaea patulella* Walker, 1863*Uresiphita ornithopteralis* (Guenée, 1857)**Depressariidae***Eutorna intonsa* Meyrick, 1906**Elachistidae***Chrysoclista* unplaced

Elachistinae unplaced

**Erebidae***Acyphas semiochrea* (Herrich-Schäffer, 1855)

Erebidae unplaced

*Halone sejuncta* (R. Felder & Rogenhofer, 1875)*Palaeosia* unplaced*Paramsacta marginata* (Donovan, 1805)*Philenora* sp. TMAG\_F108002*Praxis edwardsii* Guenée, 1852*Scoliacma* unplaced*Spilosoma canescens* (Butler, 1875)+ *Thalarcha phalarota* Meyrick, 1886**Geometridae***Anachloris uncinata* (Guenée, 1857)*Antasia flavicapitata* (Guenée, 1857)*Capusa senilis* Walker, 1857*Chloroclystis filata* (Guenée, 1858)*Chlorocoma assimilis* (Lucas, 1888)*Chlorocoma externa* (Walker, 1861)*Chrysolarentia insulsata* (Guenée, 1858)*Chrysolarentia mecynata* (Guenée, 1857)*Chrysolarentia ptochopis* (Turner, 1907)*Crypsiphona tasmanica* Óunap & Viidalepp, 2009*Dichromodes ainaria* Guenée, 1857*Dichromodes confluaria* (Guenée, 1857)*Dichromodes consignata* (Walker, 1861)*Dichromodes euscia* Meyrick, 1890*Dichromodes longidens* Prout, 1910*Dichromodes stilbiata* (Guenée, 1857)*Dichromodes* unplaced*Dinophalus serpentaria* (Guenée, 1864)*Eccymatoge callizona* (Lower, 1894)*Epyaxa agelasta* (Turner, 1904)*Epyaxa subidaria* (Guenée, 1857)*Gastrina cristaria* Guenée, 1857*Hydriomenini* unplaced *severata* (Guenée, 1857)*Idiodes apicata* Guenée, 1857Lithinini unplaced *goniota**Melanodes anthracitaria* Guenée, 1857*Microdes villosata* Guenée, 1857*Nisista serrata* (Walker, 1857)*Oenochroma* unplaced*Oenochroma vinaria* Guenée, 1857*Pasiphilodes testulata* (Guenée, 1857)*Phrissogonus laticostata* (Walker, 1862)*Psilosticha mactaria* (Guenée, 1857)*Rhynchopsota delogramma* Lower, 1903*Scioglyptis* unplaced*Scopula optivata* (Walker, 1861)*Scopula perlata* (Walker, 1861)*Syneora mundifera* (Walker, 1860)+ *Taxeotis intermixtaria* (Walker, 1861)**Gracillariidae***Polysoma eumetalla* (Meyrick, 1880)**Heliozelidae***Heliozela* unplaced

Heliozelidae unplaced

**Hesperiidae***Ocybadistes walkeri* Heron, 1894**Lasiocampidae***Pararguda nasuta* (Lewin, 1805)**Limacodidae***Doratifera pinguis* (Walker, 1855)**Lycanidae***Theclinesstes serpentatus* (Herrich-Schäffer, 1869)**Noctuidae***Agrotis infusa* (Boisduval, 1832)*Agrotis munda* Walker, 1857*Agrotis porphyricollis* Guenée, 1852*Bathytricha truncata* (Walker, 1856)*Dasygaster pammacha* Guenée, 1852*Ectopatria* "DPILMBrownspecten"*Ectopatria* unplacedHadenini unplaced species inquirenda *exarans* Lucas, 1894Hadenini unplaced species inquirenda *ligniplena* Walker, 1857*Helicoverpa punctigera* (Wallengren, 1860)

Noctuidae unplaced

*Persectania ewingii* (Westwood, 1839)*Proteuxoa bistrigula* (Walker, 1857)*Proteuxoa melanographa* (Turner, 1908)*Proteuxoa* sp. nr *flexirena* (Walker, 1865)**Nolidae***Nola* ANIC sp. 03

Nolidae unplaced

**Notodontidae***Epicoma melanospila* (Wallengren, 1860)*Psalidostetha banksiae* (Lewin, 1805)+ *Scythrophanes stenoptera* Turner, 1926**Nymphalidae***Heteronympha merope* (Fabricius, 1775)*Vanessa kershawi* (McCoy, 1868)*Vanessa itea* (Fabricius, 1775)**Oecophoridae***Araeostoma* ANIC sp. 01*Barea atmophora* Turner, 1916*Barea exarcha* (Meyrick, 1883)*Barea* unplaced*Bida radiosella* (Walker, 1863)

Oecophoridae unplaced

*Oxythecta hieroglyphica* Meyrick,  
 + *Philobota olympias* Meyrick, 1889  
*Philobota* sp. TMAG\_F058300  
*Wingia* group unplaced

**Pieridae**

\*i *Pieris rapae* (Linnaeus, 1758)

**Plutellidae**

*Plutella xylostella* (Linnaeus, 1758)

**Psychidae**

*Psychidae* unplaced

**Pyrallidae**

*Etiella behrii* (Zeller, 1848)  
*Faveria tritalis* (Walker, 1863)  
*Meyriccia latro* (Zeller, 1873)  
 Phycitinae unplaced  
*Stericta marmorea* (Warren, 1891)

**Pyraloidea**

*Pyraloidea* unplaced

**Saturniidae**

*Opodiphthera helena* (White, 1843)

**Scythrididae**

*Scythris rhabducha* Meyrick, 1897

**Sphingidae**

*Hippotion scrofa* (Boisduval, 1832)

**Tineidae**

+ *Edosa* sp. TMAG\_F99719  
*Monopis icterogastra* (Zeller, 1852)

**Tortricidae**

*Acropolitis ptychosema* Turner, 1927  
*Acropolitis rudisana* (Walker, 1863)  
*Cochylis* cf ANIC sp. 01  
*Epiphyas epichorda* (Meyrick, 1910)  
 Eucosmini unplaced  
*Euphona ammochroa* (Lower, 1893)  
*Holocola* unplaced  
*Meritastis* ANIC sp. 02  
 Olethreutinae unplaced  
 + *Peraglyphis* sp. TMAG\_F99734  
*Strepsicrates ejectana* (Walker, 1863)  
*Subfurcatana* unplaced  
*Syllomatia* unplaced  
*Symphygas nephaula* (Meyrick, 1910)

**Tortricidae**

Tortricidae unplaced

**Xyloryctidae**

Xyloryctidae unplaced

**MANTODEA**

**Mantidae**

*Orthodera ministralis* (Fabricius, 1775)  
*Tenodera australasiae* (Leach, 1814)

**MECOPTERA**

**Bittacidae**

*Harpobittacus australis* (Klug, 1838)

**NEUROPTERA**

**Chrysopidae**

*Apertochrysa edwardsi* (Banks, 1940)

**Chrysopidae**

+ *Mallada signatus* (Schneider, 1851)

**Hemerobiidae**

*Micromus tasmaniae* (Walker, 1860)

**Mantispidae**

*Campion australasiae* (Guérin-Ménéville, 1844)

**ODONATA**

**Lestidae**

*Austrolestes analis* (Rambur, 1842)

**ORTHOPTERA**

**Acrididae**

+ *Austroicetes frater* (Brancsik, 1897)  
*Austroicetes vulgaris* (Sjöstedt, 1931)  
*Cirphula pyrrhocnemis* (Stål, 1861)  
*Gastrimargus musicus* (Fabricius, 1775)  
*Goniaea australasiae* (Leach, 1814)  
*Macrotona australis* (Walker, 1870)  
 e+ *Schayera baiulus* (Erichson, 1842)  
 + *Schizobothrus flavovittatus* Sjöstedt, 1921  
 + *Urnisa rugosa* de Saussure, 1884

**Gryllidae**

+ *Lepidogryllus parvulus* (Walker, 1869)

**Morabidae**

+ *Vandiemena viatica* (Erichson, 1842)

**Tetrigidae**

*Paratettix argillaceus* (Erichson, 1842)

**Tettigoniidae**

*Conocephalus bilineatus* (Erichson, 1842)  
*Zaprochilus australis* (Brullé, 1835)

**Trigonidiidae**

+ *Bobilla bakali* Otte & Alexander, 1983

**OTHER ARTHROPODS**

**ARANEAE (SPIDERS)**

**Araneidae**

*Argiope keyserlingi* Karsch, 1878  
*Austracantha minax* (Thorell, 1859)

**Lycosidae**

*Tetrallycosa oraria* (L. Koch, 1876)

**Salticidae**

*Maratus tasmanicus* Otto & Hill, 2013

**Sparassidae**

*Neosparassus diana* (L. Koch, 1875)

**CRUSTACEA - AMPHIPODA**

**Chiltoniidae**

*Austrochiltonia australis* (Sayce, 1901)  
*Austrochiltonia subtenuis* (Sayce, 1902)

**CRUSTACEA - DECAPODA**

**Parastacidae**

*Engaeus* unplaced

**CRUSTACEA - ISOPODA**

**Scyphacidae**

e+ *Haloniscus searlei* Chilton, 1920

**GASTROPODA**

**Arionidae**

\*i *Arion intermedius* Normand, 1852

**Charopidae**

*Scelidoropa officeri* (Legrand, 1871)  
 + *Scelidoropa* sp. "Little Musselroe"  
*Scelidoropa* sp. "Pioneer"



**Helicidae**\*<sub>i</sub> *Cornu aspersum* (Muller, 1774)**Hygromiidae**\*<sub>i</sub> *Prietocella barbara* (Linnaeus, 1758)**Imacidae**\*<sub>i</sub> *Lehmannia nyctelia* (Bourguignat, 1861)**Punctidae***Paralaoma hobarti* (Cox, 1868)*Laomavix collisi* (Brazier, 1877)*Magilaoma* sp. "Tasmania"**Succineidae***Austrosuccinea australis* (Férussac, 1821)**Tomichiidae***Coxiella straita* (Reeve, 1842)

\* *Calidris ruficollis* (Pallas, 1776)  
 \* *Calyptorhynchus funereus* (Shaw, 1794)  
 \*<sub>i</sub> *Carduelis carduelis* (Linnaeus, 1758)  
 \* *Cereopsis novaehollandiae* Latham, 1801  
 \* *Charadrius ruficapillus* Temminck, 1822  
 \* *Chroicocephalus novaehollandiae* (Stephens, 1826)  
 \* *Chrysococcyx basalis* (Horsfield, 1821)  
 \* *Chrysococcyx lucidus* (Gmelin, 1788)  
 \* *Circus approximans* Peale, 1848  
 \* *Colluricincla harmonica* (Latham, 1801)  
 \* *Coracina novaehollandiae* Gmelin, 1789  
 \* *Corvus tasmanicus* Mathews, 1912  
 \* *Coturnix ypsilophora* Bosc, 1792  
 \* *Cracticus torquatus* (Latham, 1801)  
 \* *Cygnus atratus* (Latham, 1790)  
 \*<sub>i</sub> *Dacelo novaeguineae* (Hermann, 1783)  
 \* *Egretta novaehollandiae* (Latham, 1790)  
 \* *Epthianura albifrons* (Jardine & Selby, 1828)  
 \* *Falco berigora* Vigors & Horsfield, 1827  
 \* *Fulica atra* Linnaeus, 1758  
 \* *Gymnorhina tibicen* (Latham, 1801)  
 \* *Haematopus fuliginosus* Gould, 1845  
 \* *Haematopus longirostris* Vieillot, 1817  
 \*<sub>v</sub> *Haliaeetus leucogaster* Gmelin, 1788  
 \* *Hirundo neoxena* (Gould, 1842)  
 \* *Hydroprogne caspia* (Pallas, 1770)  
 \* *Larus pacificus* Latham, 1801  
 \* *Malurus cyaneus* (Ellis, 1782)  
 \* *Pachycephala pectoralis* (Latham, 1801)  
 \* *Pelecanus conspicillatus* Temminck, 1824  
 \* *Petroica boodang* (Lesson 1838)  
 \* *Phalacrocorax carbo* (Linnaeus, 1758)  
 \* *Phylidonyris novaehollandiae* (Latham, 1790)  
 \* *Rhipidura albiscapa* Gould, 1840  
 \* *Sericornis humilis* Gould, 1838  
 \* *Stagonopleura bella* (Latham, 1801)  
 \*<sub>v</sub> *Sternula nereis* (Gould, 1843)  
 \* *Strepera fuliginosa* (Gould, 1837)  
 \* *Strepera versicolor* (Latham, 1801)  
 \*<sub>i</sub> *Sturnus vulgaris* Linnaeus, 1758  
 \* *Tadorna tadornoides* (Jardine & Selby, 1828)  
 \* *Thalasseus bergii* (Lichtenstein, 1823)  
 \*<sub>v</sub> *Thinornis cucullatus* (Vieillot, 1818)  
 \* *Tribonyx mortierii* du Bus de Gisignies, 1840  
 \*<sub>i</sub> *Turdus merula* Linnaeus, 1758  
 \* *Vanellus miles* (Boddaert, 1783)  
 \* *Vanellus tricolor* (Vieillot, 1818)  
 \* *Zosterops lateralis* (Latham, 1801)

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### Appendix 1.5: Vertebrate taxa of Musselroe Wind Farm

**REPTILES**

\* *Tiliqua nigrolutea* (Quoy & Gaimard, 1824)  
 \* *Cyclodomorphus casuarinae* (Duméril and Bibron, 1839)  
 \* *Rankinia diemensis* Gray, 1841  
 \* *Austrelaps superbis* (Günther, 1858)  
 \* *Notechis scutatus* Peters, 1861

**MAMMALS**

\* *Macropus rufogriseus* (Desmarest, 1817)  
 \* *Macropus giganteus* Shaw, 1790  
 \* *Thylogale billardierii* (Desmarest, 1822)  
 \* *Vombatus ursinus* (Shaw, 1800)  
 \*<sub>e</sub> *Sarcophilus harrisii* (Boitard, 1841)  
 \*<sub>i</sub> *Oryctolagus cuniculus* (Linnaeus, 1758)

**BIRDS**

\* *Acanthiza chrysorrhoa* (Quoy & Gaimard, 1830)  
 \* *Acanthiza pusilla* (Shaw, 1790)  
 \* *Acanthorhynchus tenuirostris* (Latham, 1801)  
 \*<sub>i</sub> *Alauda arvensis* Linnaeus, 1758  
 \* *Anas castanea* (Eyton, 1838)  
 \* *Anas superciliosa* Gmelin, 1789  
 \* *Anthochaera chrysoptera* (Latham, 1801)  
 \* *Anthochaera paradoxa* (Daudin, 1800)  
 \* *Anthus australis* (Gmelin, 1789)  
 \*<sub>e</sub> *Aquila audax fleayi* Condon & Amadon, 1954  
 \* *Arenaria interpres* (Linnaeus, 1758)  
 \* *Artamus cyanopterus* (Latham, 1801)  
 \* *Cacomantis flabelliformis* Latham, 1801  
 \* *Cacomantis pallidus* (Latham, 1801)

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