

TASMANIAN MUSEUM AND ART GALLERY'S EXPEDITION OF DISCOVERY III – THE FLORA AND FAUNA OF THE SPRING BAY MILL AREA AFTER A LONG HISTORY OF INDUSTRIAL USE

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(with one text-figure, seven plates, three tables and one appendix)

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Flora and fauna surveys were conducted at the Spring Bay Mill property and adjacent area near Triabunna in 2019 as part of the Tasmanian Museum and Art Gallery's ongoing research, collection-building and nature-discovery program entitled *Expeditions of Discovery*. Although a large portion of the mill site has experienced significant disturbance, some bushland remnants on the property and the adjacent coastal reserve remain in very good ecological condition and are refugia for species now lost from the wider landscape. The survey recorded 1088 taxa, principally from the targeted groups of vascular plants, bryophytes, lichens, beetles, butterflies and moths, with several of the taxa, chiefly lichens and invertebrates, either new to science or new records for Tasmania. The survey expands our knowledge of the flora and fauna of the Triabunna area and serves as a baseline for a property undergoing strategic rehabilitation after a long history of industrial use.

Key Words: species discovery, biodiversity, Tasmania, multidisciplinary survey, Triabunna, Spring Bay Mill.

INTRODUCTION

The Tasmanian Museum and Art Gallery's (TMAG) expedition to the Spring Bay Mill property was the third in a series of multidisciplinary biological surveys conducted 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 poorly sampled areas 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 two expeditions in this series were conducted at the *Wind Song* property at Little Swanport in 2017 (Baker *et al.* 2019), and the Musselroe Wind Farm at Cape Portland (Baker *et al.* 2021). Collectively, they have recorded approximately 2300 taxa, including several new to science or for Tasmania (McCarthy & Kantvilas 2018, Elix *et al.* 2019a, Elix *et al.* 2019b, Elix & Kantvilas 2020, Kantvilas 2021, Kantvilas *et al.* 2020, Kantvilas *et al.* 2021).

The Spring Bay Mill site provided a unique opportunity to focus on a part of Tasmania that had been previously poorly surveyed for flora and fauna, with very few vouchered collections held in museums and herbaria. Furthermore it enabled the establishment of a biological baseline for underpinning the long-term aim of the property owners to rehabilitate the site after decades of heavy industrial use. The survey focused on vascular plants, bryophytes, lichens, butterflies and moths, and beetles, with other taxonomic groups recorded opportunistically.

METHODS

The Spring Bay Mill property is located on Tasmania's east coast, approximately 5 km southeast of Triabunna (fig. 1). It is privately owned and managed as an events venue, having previously had a long history (c. 40 years) of industrial use as one of Tasmania's main woodchip mill and export sites. The property covers c. 40 ha and is bordered by approximately 1.7 km of reserved coastline and farmland (fig. 1). A large proportion of the property (~60 %) was previously cleared and consists of large buildings and hard surfaces. Despite this, some remnant patches of native vegetation with a diverse range of habitats still remain. The survey area is predominantly underlain by Triassic sandstone (Forsyth *et al.* 2005), which is exposed along the adjacent coastline.

The climate of eastern Tasmania corresponds to the Köppen classification of *Cfb* (temperate, warm summer, without dry season (Peel *et al.* 2007)). The nearest weather station to Spring Bay Mill is at Orford, approximately 5 km to the west, where average temperatures fluctuate from 3.6–13.1°C in winter to 12.1–22.2°C in summer. Modelling by Land Tasmania, following methods prescribed in Webb *et al.* (2015), suggests average minimum temperatures of 5.6–6.6°C for July and 12.7–13.3°C for January, with average maximum temperatures of 12.4–13.3°C in July and 21.5–21.7°C in January (LIST 2020). Mean monthly rainfall is relatively steady and varies between 44.5 mm and 64.9 mm, with an annual average of 667 mm (BOM 2020).

The property was surveyed from 18–22 November 2019, with follow-up invertebrate sampling and trap-sample

FIGURE 1 – Location of the Spring Bay Mill property showing main collecting locations and approximate reserve boundaries. 1 Freestone Cove, 2 Freestone Point, 3 Freestone Point (hinterland), 4 Freestone Point (west coast), 5 North West Corner, 6 Quiet Corner, 7 Cresponea Cliffs, 8 Glamping Glade.



collection on 18 December 2019, 15 January 2020 and 14 February 2020, and additional lichen sampling from 9–10 January 2021.

Sampling methods are described in previous accounts of TMAG expeditions (Baker *et al.* 2019, 2021) so are not repeated here. Sampling occurred throughout the property as well as in the adjacent coastal reserve. The main collecting localities are shown in figure 1 and listed in table 1. Additionally, the littoral and sublittoral zones were investigated by snorkelling and beach-walking, although only a few of the more prominent taxa were sampled or otherwise recorded. Identification was undertaken using 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% HNO₃, 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) (<https://www.csiro.au/en/about/facilities-collections/collections/anica>) and the Biosecurity Tasmania Insect Collection at the New Town Research Laboratories of the Department of Primary Industries, Parks, Water and Environment.

Vascular plant nomenclature follows de Salas and Baker (2021), common names follow Wapstra *et al.* (2005) and designated in capitals. Nomenclature for mosses and liverworts is in accordance with the Australian Moss Name

Index (ABRS 2021a), the Checklist of Australian Liverworts and Hornworts (McCarthy 2006) and Tropicos (Tropicos.org. 2021). Lichen nomenclature mainly follows McCarthy (2020). Nomenclature of vertebrate and invertebrate taxa identified to species, follows the Australian Faunal Directory (ABRS 2021b).

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,

TABLE 1 – Main collecting localities at Spring Bay Mill

Site	Fig. 1 ref	Latitude	Longitude
Freestone Cove	1	42° 32' 44"S	147° 55' 56"N
Freestone Point	2	42° 33' 00"S	147° 55' 57"N
Freestone Point (hinterland)	3	42° 32' 57"S	147° 55' 58"N
Freestone Point (west coast)	4	42° 32' 58"S	147° 55' 55"N
North West Corner	5	42° 32' 31"S	147° 55' 54"N
Quiet Corner	6	42° 32' 47"S	147° 56' 18"N
Cresponea Cliffs	7	42° 32' 57"S	147° 56' 07"N
Glamping Glade	8	42° 32' 30"S	147° 56' 06"N

TABLE 2 – Overview of taxa recorded from Spring Bay Mill and surrounding coastal reserve

Group	Total taxa	Introduced species
Vascular Plants	144	39
Eudicots	90	24
Magnoliids	1	
Gymnosperms	1	
Monocotyledons	50	15
Pteridophytes	2	
Bryophytes	27	
Liverworts	4	
Mosses	23	1
Lichens	124	
Invertebrates – Lepidoptera	191	1
Invertebrates – Coleoptera	213	9
Invertebrates – Other Insects	279	3
Blattodea	4	
Dermaptera	1	
Diptera	122	2
Hemiptera	61	
Hymenoptera	70	1
Neuroptera	4	
Odonata	2	
Orthoptera	13	
Psocodea	1	
Thysanoptera	1	
Other Arthropods	9	3
Araneae	3	1
Crustacea (terrestrial)	1	1
Crustacea (marine)	5	1
Mollusca (terrestrial)	2	1
Mollusca (marine)	47	2
Bryozoa (marine)	12	2
Cnidaria (marine)	4	
Chordata: Tunicata (marine)	4	1
Vertebrates	32	5
Birds	31	5
Amphibians	1	
Total	1088	102

TABLE 3 – Putative insect novelties recorded from Spring Bay Mill and surrounding coastal reserve

Order	Family: Subfamily	Taxon	No. of specimens
Coleoptera	Meloidae	Nemognathini unplaced sp. TMAG_F101079	1
Coleoptera	Scarabaeidae	Melolonthinae unplaced sp. TMAG_F111109	1
Diptera	Pyrgotidae	<i>Adapsilia</i> sp. TMAG_F101464	1
Diptera	Therevidae	<i>Parapsilocephala</i> sp. TMAG_F100830	1
Hymenoptera	Mutillidae	<i>Ephutomorpha</i> sp. TMAG_F103101	1
Lepidoptera	Elachistidae: Elachistinae	<i>Elachista</i> sp. TMAG_F118015	1
Lepidoptera	Elachistidae: Elachistinae	<i>Elachista</i> sp. TMAG_F118016	1
Lepidoptera	Elachistidae: Elachistinae	<i>Elachista</i> sp. TMAG_F118018	1
Lepidoptera	Elachistidae: Elachistinae	<i>Elachista</i> sp. TMAG_F118019	1
Lepidoptera	Elachistidae: Elachistinae	<i>Elachista</i> sp. TMAG_F118020	2
Lepidoptera	Elachistidae: Elachistinae	<i>Elachista</i> sp. TMAG_F118022	1



PLATE 1 – North West Corner. White Gum *Eucalyptus viminalis* woodland over skeletal soils and sandstone rock plates.



PLATE 2 – Cresponea Cliffs. Sandstone cliffs dominated by *Allocasuarina verticillata* forest.



PLATE 3 – Oyster Bay Pine *Callitris rhomboidea* woodland on sandstone.

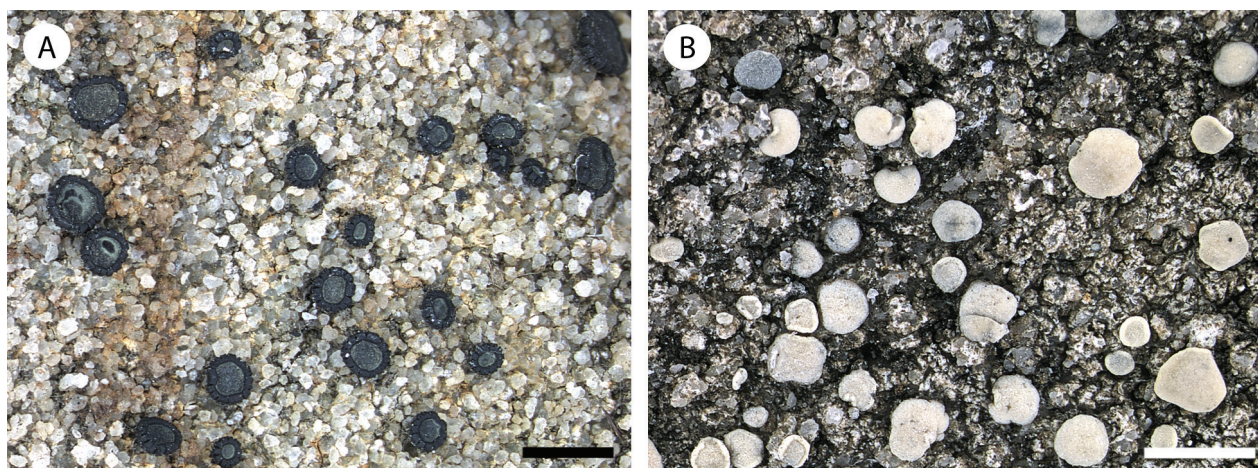


PLATE 4 – New lichen species discovered at Spring Bay Mill. **A.** *Creponea graemeannae* with black apothecia scattered over boulders of coarse sandstone; **B.** *Cliostomum* sp. with pale greyish apothecia on seashore sandstone. Scales = 2 mm.

by referring to specimens in ANIC. Species with official common names are designated in capitals.

RESULTS

In total, 1088 taxa were recorded from the Spring Bay Mill property and adjacent coastal reserve (table 2). This comprises 144 vascular plants (Appendix 1.1); 23 mosses and 4 liverworts (Appendix 1.2); 124 lichens (Appendix 1.3); 689 terrestrial or freshwater aquatic invertebrates (683 insects, 3 spiders, 1 terrestrial isopod crustacean and 2 terrestrial gastropod molluscs) (Appendix 1.4); and 72 marine invertebrates (5 crustaceans, 12 bryozoans, 4 cnidarians, 4 tunicates and 47 marine molluscs) (Appendix 1.5). Additionally, 1 species of frog and 31 bird species were observed (Appendix 1.6).

The dominant habitats recorded were: grassy Black Sheoak *Allocasuarina littoralis* and Black Peppermint *Eucalyptus amygdalina* woodland with an understorey of Kangaroo Grass *Themeda triandra*, Wallaby Grasses *Rytidosperma* spp. and Sagg *Lomandra longifolia* (Glamping Glade fig. 1, table 1); White Gum *Eucalyptus viminalis* woodland over skeletal soils and sandstone rock plates (North West Corner fig. 1, table 1, pl. 1); and Drooping Sheoak *Allocasuarina verticillata* and Oyster Bay Pine *Callitris rhomboidea* woodland on sandstone clifftops (*Cresponea* Cliffs fig. 1, table 1, pls 2, 3). TASVEG classification units encountered, as described by Kitchener and Harris (2013), include *Allocasuarina verticillata* forest (NAV), *Eucalyptus amygdalina* forest and woodland on sandstone (DAS); *Allocasuarina littoralis* forest (NAL) and *Callitris rhomboidea* forest (NCR). Of note is that the latter three vegetation types equate to ones listed as threatened on Schedule 3A of the *Tasmanian Nature Conservation Act 2002*. Several taxa collected are new records for this area of the east coast of Tasmania, and provide infill of ranges for several common taxa of vascular plants such as Coast Speargrass *Austrostipa stipoides*, Pink Purslane *Calandrinia calypttrata*, Australian Saltgrass *Distichlis distichophylla*, Dense Woodrush *Luzula*

densiflora and Streaked Arrowgrass *Triglochin striata*.

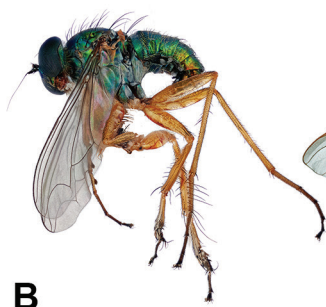
The bryophyte flora was restricted to a range of dry-country species growing on soil, with a few additional species on rocks or other substrates, and included taxa such as the liverwort *Chiloscyphus semiteres*, and mosses *Triquetrella papillata*, *Barbula calycina*, *Pseudocrossidium crinitum*, *Ceratodon purpureus* and *Campylopus introflexus*. The only exception to this trend was along a drainage line of a wastewater treatment system, where the bryophyte flora was dominated by taxa that grow in high-moisture locations, such as *Eurhynchium praelongum*. In general, bryophytes grew as scattered clumps or mats. However, the ground cover in a clearing in woodland just north of the beach at Windlass Bay consisted almost entirely of a large turf, several metres across, containing the same suite of species found in other dry parts of the property. No epiphytic taxa were recorded.

The lichen flora was dominated by saxicolous (rock-growing) species, either from the littoral zone or from the sandstone bluffs in dry sclerophyll woodland overlooking the sea. Epiphytes were largely absent, and many saxicolous taxa, such as the large foliose species of Parmeliaceae, showed obvious signs of physical damage. Three species collected during this survey are new to science: *Cresponea graemeannae* (pl. 4A) from the sandstone bluffs (Kantvilas 2020); *Dictyomeridium tasmanicum* from the bark of *A. verticillata* in coastal woodland (McCarthy & Kantvilas in press); and an undescribed species of *Cliostomum* from seashore rocks (pl. 4B). One species, *Buellia hypopurpurea*, represents a new record for Australia, and *Trapelia placodioides* a new record for Tasmania. In addition to the new taxa, three Tasmanian endemics were recorded: *Anisomeridium disjunctum*, *Leprea parathalassica* and *L. pseudodactylina*.

Surveys of insects at the Spring Bay Mill area recorded 683 taxa, with each of the main habitats present, including the foreshore, supporting characteristic species assemblages. Some of the more notable insects recorded are illustrated in plates 5 and 6. Many insect specimens could not be assigned to described species, due to a lack of available reference material. However, at least some of these are



A



B



C



D



E



F



G



H



I



J



K



L



M



N



O

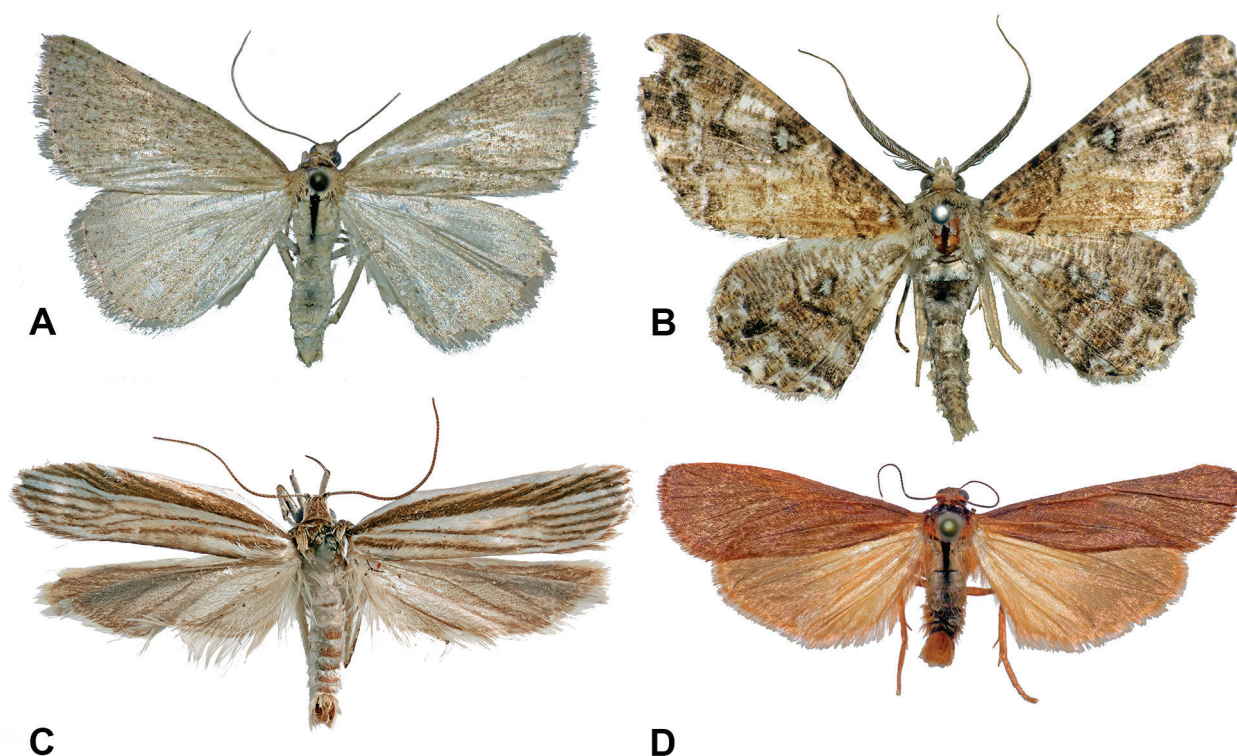


PLATE 6 – A selection of moths recorded from Spring Bay Mill. **A.** *Cassythaphaga petrochroa* (27 mm); **B.** *Cleora* sp. TMAG_F107069 (40 mm); **C.** *Xylorycta calligramma* (19 mm); **D.** *Scoliacma adrasta* (30 mm). Measurements = wingspan.

likely to represent species new to science. Table 3 lists insect taxa that are represented in the TMAG collections only by specimens from Spring Bay Mill and that are likely to be newly recorded undescribed taxa.

Several insect species were collected during this survey with few or no prior Tasmanian records. These included the casuarina-associated weevil *Misophrice hispida*, ripiphorid beetle *Sitarida scabriceps* (a parasitoid of wood-inhabiting beetles), oil-beetle Nemognathini unplaced sp. TMAG_F101079 (another parasitoid, perhaps of native bees), sandy-ground robberfly *Bathypogon nigrinus* (pl. 5A), wetland long-legged fly *Narabeenia spinipes* (pl. 5B), scarab-killing flies *Adapsilia* sp. TMAG_F101464 (pl. 5C) and *Cardiacera carnei* (pl. 5D), rhinophorid fly *Axinia* cf. *cornuta* (a parasitoid of slaters) (pl. 5E), dead-wood hoverfly *Psilota viridis* (pl. 5F), stiletto-flies *Acupalpa rostrata* (pl. 5G), *Acraspisa* sp. TMAG_F95917 (pl. 5H), *Parapsilocephala bifasciata* and *Parapsilocephala* sp. TMAG_F100830 (pl. 5I), grassland stink-bug *Eribotes leana* (pl. 5J), grassland assassin-bug *Coranus callosus* (pl. 5K),

jackjumper-ant-relative *Myrmecia fulvipes* (pl. 5L), ant-lion *Mossega indecisa* (pl. 5M), and Golden Band-wing Grasshopper *Cryptobothrus chrysophorus* (pl. 5N).

Six undescribed moth species were recorded during this survey, all from the speciose micromoth genus *Elachista* in the gelechioid family Elachistidae (grass-miners) (table 3). Two new state records of moths (Appendix 1.4) are species from the large family Geometridae: *Cassythaphaga petrochroa* (pl. 6A), a member of the Gondwanan tribe Diptychini, collected in open coastal woodland at Freestone Point where its larvae feed on dodder laurels (*Cassythra*); and *Cleora* sp. TMAG_F107069 (pl. 6B), previously recorded from Victoria at Quiet Corner near remnant coastal vegetation. Finally, several moths that are either uncommon or poorly collected include *Xylorycta calligramma* (pl. 6C) (Xyloryctidae), the Tasmanian endemic footman moth *Scoliacma adrasta* (pl. 4D) (Erebidae), tiger moth *Paramsacta marginata* (Erebidae), an undescribed xyloryctine oecophorid, *Araestoma* ANIC sp. 01, and the geometrid *Taxeotis intermixtaria*.

PLATE 5 (opposite) – A selection of notable insects recorded from Spring Bay Mill. **A.** Robber-fly *Bathypogon nigrinus* (9 mm); **B.** Long-legged fly *Narabeenia spinipes* (4 mm); **C.** Scarab-killing fly *Adapsilia* sp. TMAG_F101464 (7 mm); **D.** Scarab-killing fly *Cardiacera carnei* (7 mm); **E.** Rhinophorid fly *Axinia* cf. *cornuta* (4 mm); **F.** Hoverfly *Psilota viridis* (7 mm); **G.** Stiletto-fly *Acupalpa rostrata* (7 mm); **H.** Stiletto-fly *Acraspisa* sp. TMAG_F95917 (5 mm); **I.** Stiletto-fly *Parapsilocephala* sp. TMAG_F100830 (4 mm); **J.** Stink-bug *Eribotes leana* (nymph) (3mm); **K.** Assassin-bug *Coranus callosus* (12 mm); **L.** Ant *Myrmecia fulvipes* (6 mm); **M.** Ant-lion *Mossega indecisa* (50 mm); **N.** Grasshopper *Cryptobothrus chrysophorus* (18 mm); **O.** Scarab beetle Melolonthinae unplaced sp. TMAG_F111109 (5 mm). Measurements = body length.



PLATE 7 – Colonisers of bare ground (flower inset).
A. *Cynoglossum austral* (introduced), **B.** *Lysimachia arvensis* (introduced).

Threatened species

No plants or invertebrates listed under the Tasmanian *Threatened Species Protection Act 1995* were recorded from the property. Amongst the avifauna, the only such species observed (overhead) was the Wedge-tailed Eagle, which is listed as endangered but this species forages widely and no breeding habitat occurred in the survey area.

Exotic species

Thirty-nine species of introduced vascular plants were recorded (Appendix 1.1). Most are annual and perennial herbs and grass species of agricultural origin, confined mainly to disturbed areas of the property. A smaller number of taxa included environmental weeds of garden origin and were limited to single plants or small populations (Largeleaf Cotoneaster *Cotoneaster glaucophyllus* var. *serotinus*, Agapanthus *praecox* subsp. *orientalis*, New Zealand Cabbage Tree *Cordyline australis*, Yellow Pigface *Carpobrotus edulis*). Beach and foreshore vegetation supported discrete populations of Trailing Daisy *Dimorphotheca fruticosa* and Searocket *Cakile maritima*. Four species: Slender Thistle *Carduus pycnocephalus*, Winged Thistle *Carduus tenuiflorus*, Gorse *Ulex europaeus* and Spanish Heath *Erica lusitanica*, are declared weeds under the Tasmanian *Weed Management Act 1999*. One introduced species of moss *Eurhynchium praelongum* was also found on the property.

The Spring Bay Mill site also hosts a range of exotic invertebrate taxa (Appendix 1.4), including intentional and accidental introductions. The European Thistle Gall-fly *Urophora stylata* is an intentional introduction into Tasmania as a biocontrol agent of thistles; another, the weevil *Exapion ulicis*, was introduced into Tasmania

from Europe to control Gorse; and two dung-beetle species *Aphodius fimetarius* and *Euoniticellus fulvus*, are also European introductions that are adept at processing the dung of introduced herbivores. The European slater *Porcellio scaber* was superabundant among strandline vegetation, to the extent that some of the pitfall traps set there were completely full of slaters after just a few days. A single specimen of the European plantain-associated weevil *Mecinus pascuorum*, was collected at Freestone Cove. In Australia, it is otherwise only known from the Hobart area where its presence was also only recently confirmed. Six marine invertebrate species are also introductions (Appendix 1.5) and consist of: a barnacle *Balanus trigonus*; two bivalve molluscs *Mytilus galloprovincialis* and *Magallana gigas*; two bryozoans (lace-corals) *Bugulina flabellata* and *Membranipora membranacea*; and an ascidian (sea-squirt) *Ascidia aspersa*. Five species of bird (Appendix 1.6) are also introduced.

DISCUSSION

The Spring Bay Mill site supports remnant native, coastal vegetation within a general area where these communities have been under severe pressure from residential, agricultural and industrial development. It is also a fine example of a Triassic sandstone coastal environment, inviting comparison with other areas that share the same geology, such as Lime Bay, Midway Point, Adventure Bay and Randalls Bay. Amongst the lichens at least, there are recognised floristic similarities evident between these sites, as demonstrated by the presence of the uncommon, undescribed species of *Cliostomum*. Furthermore, these native vegetation remnants can be presumed to be secure from future development

and disturbance, as the current managers have declared a strong interest in conserving these bushland remnants and rehabilitating the property.

One of the stated aims of the TMAG Expedition program is to provide baseline biological data. In this respect, the Spring Bay Mill survey is particularly important as the owners embark on a plan to rehabilitate the natural values of the site. Already there are signs of significant regeneration of *Callitris*-dominated woodland (pl. 3), which over time may regain some of its associated epiphytes and insects.

The lichen flora of the site deserves special comment. Lichens are known to be remarkably ecologically sensitive organisms, and in other parts of the world have been used as indicators of pollution, environmental change or ecological integrity (Nimis *et al.* 2002). Despite the novelties discovered during this survey, the lichen flora of the site is neither unusual nor species-rich. Indeed, it tends to be unusually depauperate, with many habitats, especially tree bark in woodland communities, conspicuously devoid of epiphytes, including bryophytes. Furthermore, the signs of physical damage observed on many saxicolous lichens is suggestive of an ecological event or events that occurred during the site's industrial history.

In contrast, the insect fauna of the Spring Bay Mill proved to be remarkably rich despite being such a small site with a long industrial history, and significant discoveries (putative new species, novelties for Tasmania, range extensions or infills) were made. Overall the seasonal moth fauna of 195 species was typical of those found in spring in vegetation dominated by grasses with some stands of *Eucalyptus*, *Acacia* and *Allocasuarina*. This collection included around 15% of the known Lepidoptera in Tasmania, which equates to high species diversity for this area. Highest moth diversity was recorded at Freestone Point in coastal woodland, where 80 species were collected. This was also the location for one new state record and for three uncommon species. High moth diversity was also recorded in North West Corner and Quiet Corner, with about 60 species each. The abundance of leaf-litter dwellers from the micromoth family Oecophoridae contributed to the high species diversity in the North West Corner. The most common species by far was the pasture tunnel moth *Philobota productella* (Oecophoridae), which was attracted to light in extremely large numbers.

During its period of use as a woodchip mill, the property received trucks and logs from southern and eastern Tasmania, most likely leading to the introduction of species through contaminated loads and machinery. This, and its proximity to farmland, may account for the high numbers of introduced plants recorded at the property. Two species that readily colonise bare ground at the site are the introduced Scarlet Pimpernel *Lysimachia arvensis* and native Coast Houndstongue *Cynoglossum australe* (pl. 6). Both taxa are vigorous colonisers and were found to be widespread in areas of disturbance. The introduced succulent Yellow Pigface *Carpobrotus edulis* has become common to abundant and forms locally dense patches and could outcompete and/or hybridise with the native species *C. rossii*, as has been observed in South Australia (Biffin *et al.* 2016, Waycott 2016).

Appendix 1.3 lists several lichen novelties encountered during this survey. Of these, *Cresponea graemeannae* (pl. 4A) is an uncommon Tasmanian endemic that is now also known from South Sister to the north and Mt Forester to the south (Kantvilas 2020). *Dictyomeridium tasmanicum* remains known only from the survey area (McCarthy & Kantvilas in press), and an undescribed species of *Cliostomum* (listed as '*Cliostomum* sp.' in Appendix 1.3) (pl. 4B) has since been found in other coastal sandstone areas in southeastern Tasmania.

Eleven insect taxa that are represented in TMAG collections exclusively by specimens collected from the Spring Bay Mill site are likely to be new or undescribed (table 3). Of these, the meloid beetle Nemognathini unplaced sp. TMAG_F101079, does not fit the descriptions of any in its tribe covered in the most recent review of the family in Australia (Bologna *et al.* 2013). The scarabaeid beetle Melolonthinae unplaced sp. TMAG_F111109 (pl. 5O), lacks some key characteristics that would usually enable identification to genus, so its taxonomic placement remains imprecise, but investigations are continuing. The scarab-killing (pyrgotid) fly *Adapsilia* sp. TMAG_F101464 (pl. 5C), does not fit the descriptions of any in its genus covered in the most recent Australian review of this unusual, nocturnal family (Paramonov 1958). The therevid fly *Parapsilocephala* sp. TMAG_F100830 (pl. 5I) collected from the grassland near Freestone Point belongs to a genus that has not been systematically reviewed and that undoubtedly contains more species than have been described. The velvet-ant (Mutillidae) *Ephutomorpha* sp. TMAG_F103101 (a winged male) was collected in the grassland near Freestone Point. It is among several from the TMAG collections currently on loan to researchers at ANIC where they may form the basis of new species descriptions. The six putative new species of *Elachista* moths were recorded from several sites. *Elachista* is a large genus with many undescribed species and includes members of the subfamily Elachistinae that comprises small moths whose caterpillars are leaf-miners. A recent comprehensive review of the Australian elachistine fauna enabled provisional identification of specimens as possibly new to science (Kaila 2011).

The mollusc shells found on the beaches represent assemblages typical for their shore types. The rocky sublittoral zone supported a wealth of encrusting invertebrates but was not thoroughly sampled. Despite this, the detection of six non-native species is probably indicative of the history of the site as a port, since ships and their ballast are postulated as having a long history of translocating marine species to Tasmanian waters (Sanderson 1990, Saunders & Withall 2006, Grove *et al.* 2018).

CONCLUSION

While the Spring Bay Mill property has endured a long period of use as an industrial site, and is still heavily degraded, it has retained patches of habitat containing high native species biodiversity which today are important refugia for species

lost from the wider landscape. These remnants provide a useful window into what the property may have looked like before its use as an industrial site for approximately 40 years, and provide an important guide to assist the owners with its future rehabilitation and conversion into a tourist accommodation and convention site.

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APPENDIX 1

Flora and fauna of the Spring Bay Mill property (taxa marked with + are new records for Tasmania and are followed by relevant specimen accession numbers; * were observed during the survey but not collected; - were recorded prior to the survey and during the survey; i are introduced taxa in Tasmania; ? are taxa that have an uncertain status, i.e., whether they are introduced or native at the site).

Appendix 1.1: Vascular Plant Taxa of Spring Bay Mill

EUDICOTS

Aizoaceae

- i *Carpobrotus edulis* (L.) N.E.Br. subsp. *edulis*
Carpobrotus rossii (Haw.) Schwantes
Tetragonia implexicoma (Miq.) Hook.f.

Amaranthaceae

- Einadia nutans* (R.Br.) A.J.Scott subsp. *nutans*
Hemichroa pentandra R.Br.
Rhagodia candolleana Moq. subsp. *candolleana*
Sarcocornia quinqueflora (Bunge ex Ung.-Sternb.)
A.J.Scott subsp. *tasmanica* Paul G.Wilson

Apiaceae

- Apium prostratum* Labill. ex Vent. subsp. *prostratum*
var. *prostratum*

Asteraceae

- i *Arctotis stoechadifolia* P.J.Bergius
Brachyscome aculeata (Labill.) Less.
- i *Carduus pycnocephalus* L.
- i *Carduus tenuiflorus* Curtis
Cassinia aculeata (Labill.) R.Br. subsp. *aculeata*
Conyza sumatrensis (Retz.) E.Walker
Coronidium scorpioides (Labill.) Paul G.Wilson
Cotula australis (Sieber ex Spreng.) Hook.f.
- i *Dimorphotheca fruticosa* (L.) DC.
Euchiton japonicus (Thunb.) Holub
Gamochaeta calviceps (Fernald) Cabrera
- i *Hypochaeris radicata* L.
Helichrysum luteoalbum (L.) Rchb.

- Senecio glomeratus* Desf. ex Poir. subsp. *glomeratus*
Senecio pinnatifolius A.Rich. var. *pinnatifolius*
Senecio quadridentatus Labill.

- i *Sonchus asper* (L.) Hill
- i *Sonchus oleraceus* L.
- i *Tragopogon porrifolius* L. subsp. *porrifolius*
- i *Vellereophyton dealbatum* (Thunb.) Hilliard & B.L.Burt

Boraginaceae

- *Cynoglossum australe* R.Br.

Brassicaceae

- i *Cakile maritima* Scop. subsp. *maritima*

Campanulaceae

- Wahlenbergia gracilis* (G.Forst.) A.DC.
Wahlenbergia gymnoclada Lothian
Wahlenbergia multicaulis Benth.

Caryophyllaceae

- i *Cerastium vulgare* Hartm.
- i *Silene gallica* L. var. *gallica*
Stellaria multiflora Hook. subsp. *multiflora*

Casuarinaceae

- * *Allocasuarina verticillata* (Lam.) L.A.S.Johnson
Allocasuarina littoralis (Salisb.) L.A.S.Johnson

Celastraceae

- Stackhousia monogyna* Labill.

Convolvulaceae

- Convolvulus angustissimus* R.Br. subsp. *angustissimus*
Dichondra repens J.R.Forst. & G.Forst.

Crassulaceae

- Crassula tetramera* (Toelken) A.P.Druce & Sykes

Dilleniaceae

- Hibbertia sericea* (R.Br. ex DC.) Benth. var. *sericea*

Dipsacaceae

- i *Dipsacus fullonum* L.

Ericaceae

- i* *Erica lusitanica* Rudolphi
Leucopogon parviflorus (Andrews) Lindl.
Leucopogon virgatus (Labill.) R.Br. var. *virgatus*
Lissanthe strigosa (Sm.) R.Br. subsp. *subulata* (R.Br.) J.M.Powell

Fabaceae

- Acacia dealbata* Link subsp. *dealbata*
Acacia genistifolia Link
 ? *Acacia longifolia* (Andrews) Willd. subsp. *longifolia*
Acacia mearnsii De Wild.
Acacia melanoxylon R.Br.
Bossiaea cinerea R.Br.
 i *Dipogon lignosus* (L.) Verdc.
Indigofera australis Willd. subsp. *australis*
Kennedia prostrata R.Br.
 i *Medicago lupulina* L.
 i *Ulex europaeus* L.

Gentianaceae

- i *Centaurium erythraea* Rafn

Geraniaceae

- Geranium solanderi* Carolin

Goodeniaceae

- Goodenia lanata* R.Br.
Goodenia ovata Sm.

Haloragaceae

- Gonocarpus tetragynus* Labill.

Hypericaceae

- Hypericum gramineum* G.Forst.

Linaceae

- Linum bienne* Mill.

Malvaceae

- Asterotrichion discolor* (Hook.) Melville

Myrsinaceae

- i *Lysimachia arvensis* (L.) U.Manns & Anderb.

Myrtaceae

- Eucalyptus amygdalina* Labill.
 * *Eucalyptus globulus* Labill. subsp. *globulus*
Eucalyptus viminalis Labill. subsp. *viminalis*
 ? *Kunzea ambigua* (Sm.) Druce

Oxalidaceae

- Oxalis radicata* A.Rich.

Papaveraceae

- i *Papaver somniferum* L. subsp. *setigerum* (DC.) Arcang.

Plantaginaceae

- i *Plantago coronopus* L. subsp. *coronopus*
 i *Plantago lanceolata* L.

Portulacaceae

- Calandrinia calyptata* Hook.f.

Proteaceae

- Banksia marginata* Cav.

Rhamnaceae

- Pomaderris apetala* Labill. subsp. *apetala*

Rosaceae

- Acaena echinata* Nees
Acaena novae-zelandiae Kirk
 i* *Cotoneaster glaucophyllus* Franch. var. *serotinus*
 (Hutch.) L.T.Lu & Brach

Rutaceae

- Boronia anemonifolia* A.Cunn. subsp. *variabilis*
 (Hook.) P.G.Neish

Santalaceae

- Exocarpos cupressiformis* Labill.

Sapindaceae

- Dodonaea viscosa* Jacq. subsp. *spatulata* (Sm.)
 J.G.West

Scrophulariaceae

- Myoporum insulare* R.Br.

Solanaceae

- Solanum vescum* F.Muell.

Thymelaeaceae

- Pimelea glauca* R.Br.
Pimelea humilis R.Br.

Violaceae

- Viola hederacea* Labill. subsp. *hederacea*

GYMNOSPERMS

Cupressaceae

- Callitris rhomboidea* R.Br. ex Rich. & A.Rich.

MAGNOLIIDS

Lauraceae

- Cassytha glabella* R.Br. f. *glabella*

MONOCOTS

Agapanthaceae

- i* *Agapanthus praecox* Willd. subsp. *orientalis*
 (F.M.Leight.) F.M.Leight.

Asparagaceae

- Lomandra longifolia* Labill.

Asphodelaceae

- Bulbine glauca* (Raf.) E.M.Watson

Centrolepidaceae

- Centrolepis strigosa* (R.Br.) Poir. subsp. *strigosa*

Cyperaceae

- Carex breviculmis* R.Br.
Carex fascicularis Sol. ex Boott
Ficinia nodosa (Rottb.) Goetgh., Muasya &
 D.A.Simpson
Gahnia filum (Labill.) F.Muell.
Gahnia radula (R.Br.) Benth.
Isolepis hookeriana Boeckeler
Lepidosperma concavum R.Br.
Lepidosperma curtisiae K.L.Wilson & D.I.Morris
Schoenus apogon Roem. & Schult.
Schoenus nitens (R.Br.) Poir.

Hemerocallidaceae

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

Juncaceae

- Juncus kraussii* Hochst. subsp. *australiensis* (Buchenau)
 Snogerup
Juncus pallidus R.Br.
Juncus planifolius R.Br.
Juncus subsecundus N.A.Wakef.
Luzula densiflora (H.Nordensk.) Edgar

Juncaginaceae

- Triglochin striata* Ruiz & Pav.

Laxmanniaceae

- i* *Cordyline australis* (G.Forst.) Endl.

Orchidaceae

Diuris sulphurea R.Br.

Poaceae

i *Aira caryophylla* L. subsp. *caryophylla*

i *Anthoxanthum odoratum* L.

Austrostipa flavescens (Labill.) S.W.L.Jacobs & J.Everett

Austrostipa mollis (R.Br.) S.W.L.Jacobs & J.Everett

Austrostipa stipoides (Hook.f.) S.W.L.Jacobs & J.Everett

i *Avena sativa* L.

i *Briza minor* L.

i *Bromus catharticus* Vahl

i *Bromus cebadilla* Steud.

i *Bromus hordeaceus* L.

i *Cynosurus echinatus* L.

i *Dactylis glomerata* L.

Distichlis distichophylla (Labill.) Fassett

i *Festuca arundinacea* Schreb.

i *Holcus lanatus* L.

Lachnagrostis filiformis (G.Forst.) Trin.

i *Lolium perenne* L.

Poa poiformis (Labill.) Druce var. *poiformis*

Poa rodwayi Vickery

Rytidosperma caespitosum (Gaudich.) Connor & Edgar

Rytidosperma racemosum (R.Br.) Connor & Edgar var. *racemosum*

Rytidosperma setaceum (R.Br.) Connor & Edgar

Themeda triandra Forssk.

i *Vulpia bromoides* (L.) Gray

Restionaceae

Hypolaena fastigiata R.Br.

PTERIDOPHYTES

Dennstaedtiaceae

Hypolepis rugosula (Labill.) J.Sm.

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

Appendix 1.2: Bryophyte Taxa of Spring Bay Mill

MOSSES

Brachytheciaceae

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

Rhynchostegium tenuifolium (Hedw.) Reichardt

Bryaceae

Bryum sp.

Bryum crassum Hook.f. & Wilson

Bryum dichotomum Hedw.

Rosulabryum campylotheicum (Taylor) J.R.Spence

Rosulabryum capillare (Hedw.) J.R.Spence

Rosulabryum subtomentosum (Hampe) J.R.Spence

Rosulabryum torquescens (Bruch & Schimp.)

J.R.Spence

Dicranaceae

Campylopus appressifolius Mitt.

Campylopus introflexus (Hedw.) Brid.

Ceratodon purpureus (Hedw.) Brid.

Grimmiaceae

Grimmia pulvinata (Hedw.) Sm.

Hypnaceae

Hypnum cupressiforme Hedw.

Lembophyllaceae

Lembophyllum divulsum (Hook.f. & Wilson) Lindb.

Polytrichaceae

Polytrichum juniperinum Hedw.

Pottiaceae

Barbula calycina Schwägr.

Pseudocrossidium sp.

Pseudocrossidium crinitum (Schultz) R.H.Zander

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

Ptychomitriaceae

Ptychomitrium mittenii A.Jaeger

Ptychomnion aciculare (Brid.) Mitt.

Racopilaceae

Racopilum cuspidigerum (Schwägr.) Ångstr. var.

convolutaceum (Müll.Hal.) Zanten & Dijkstra

LIVERWORTS

Frullaniaceae

Frullania probosciphora Taylor

Geocalycaceae

Chiloscyphus semiteres (Lehm.) Lehm. & Lindenb.

Chiloscyphus subporosus (Mitt.) J.J.Engel &

R.M.Schust. var. *subporosus*

Marchantiaceae

Lunularia cruciata (L.) Dumort.

Appendix 1.3: Lichen Taxa of Spring Bay Mill

Acarospora fuscata (Nyl.) Arnold

Acarospora veronensis A.Massal.

Amandinea brunneola Elix & H.Mayrhofer

Amandinea coniops (Wahlenb.) M.Choisy ex Scheid. & H.Mayrhofer

Amandinea decedens (Nyl.) Blaha & H.Mayrhofer

Amandinea destituta Elix & Kantvilas

Amandinea litoralis (Zahlbr.) H.Mayrhofer & Elix

Amandinea neoconglomerata Elix

Amandinea prothallinata Elix & H.Mayrhofer

Anisomeridium disjunctum P.M.McCarthy & Kantvilas

Austroparmelina labrosa (Zahlbr.) A.Crespo, Divakar & Elix

Austroparmelina conlabrosa (Hale) A.Crespo, Divakar & Elix

Buellia dissa (Stirt.) Zahlbr.

Buellia extenuatella Elix & Kantvilas

Buellia cranwelliae Zahlbr.

Buellia fertilis Körb.

Buellia halonia (Ach.) Tuck.

Buellia halonioides Elix

Buellia homophylla (C.Knight) Zahlbr.

+ *Buellia hypopurpurea* Elix & A.Knight (HO599045)

Buellia kantvilasii Elix, Blanchon & A.Knight

Buellia stellulata (Taylor) Mudd var. *stellulata*

- Buellia suttonensis* Elix & A.Knight
Caloplaca bermaguiana S.Y.Kondr. & Kärnefelt
Caloplaca cribrosa (Hue) Zahlbr.
Caloplaca eos S.Y.Kondr. & Kärnefelt
Caloplaca gallowayi S.Y.Kondr., Kärnefelt & Filson
Caloplaca holocarpa (Hoffm.) A.E.Wade
Caloplaca kilcundaensis S.Y.Kondr. & Kärnefelt
Caloplaca maccarthyi S.Y.Kondr., Kärnefelt & Elix
Caloplaca rexfilsonii S.Y.Kondr. & Kärnefelt
Caloplaca sublobulata (Nyl.) Zahlbr.
Candelariella aurella (Hoffm.) Zahlbr.
Candelariella vitellina (Hoffm.) Müll.Arg.
Candelariella xanthostigmoides (Müll.Arg.) R.W.Rogers
Carbonea latypizodes (Müll.Arg.) Knoph & Rambold
Catillaria sp.
Cladia aggregata (Sw.) Nyl.
Cladia schizopora (Nyl.) Nyl.
Cladonia enantia Nyl. var. *enantia*
Cladonia ramulosa (With.) J.R.Laundon
Cladonia rigida (Hook.f. & Taylor) Hampe var. *rigida*
Cladonia verticillata (Hoffm.) Schaer.
Cladonia subradiata (Vain.) Sandst.
Cliostomum griffithii (Hoffm.) Schaer.
+ *Cliostomum* sp. (HO602358)
Cresponea graemeannae Kantvilas
+ *Dictyomeridium tasmanicum* P.M. McCarthy & Kantvilas ined. (HO602363)
Diploicia canescens (Dicks.) A.Massal.
Diploschistes gyrophoricus Lumbsch & Elix
Enterographa divergens (Müll.Arg.) Redinger
Flavoparmelia haysomii (C.W.Dodge) Hale
Flavoparmelia rutidota (Hook.f. & Taylor) Hale
Halegrapha mucronata (Stirt.) Lücking
Hypocenomyce australis Timdal
Hypocenomyce scalaris (Ach.) M.Choisy
Hypotrachyna revoluta (Flörke) Hale
Lecanora dispersa (Pers.) Sommerf.
Lecanora farinacea Fée
Lecanora flavopallida Stirt.
Lecanora galactiniza Nyl.
Lecanora margarodes (Körb.) Nyl.
Lecanora pseudistera Nyl.
Lecanora pseudogangaleoides Lumbsch subsp. *pseudogangaleoides*
Lecanora aff. *planaica* Lumbsch
Lecidea sarcogynoides Körb.
Lecidella granulosa (Nyl.) Knoph & Leuckert var. *granulosa*
Lecidella stigmathea (Ach.) Hertel & Leuckert
Lepra parathalassica (Kantvilas & Elix) A.W.Archer & Elix
Lepra pseudodactylina (A.W.Archer) A.W.Archer & Elix
Lepraria finkii (de Lesd.) R.C.Harris
Lichina intermedia (C.Bab.) M.Schultz
Menegazzia subpertusa P.James & D.J.Galloway
Micarea albornii Coppins
Micarea denigrata (Fr.) Hedl.
Mycoblasus sp.
Ochrolechia apiculata Versegghy
Opegrapha atra Pers.
Opegrapha varia Pers.
Opegrapha sp. A
Pannaria elixii P.M.Jørg. & D.J.Galloway
Paraporphidia leptocarpa (C.Bab. & Mitt.) Rambold & Hertel
Parmotrema cetratum (Ach.) Hale
Pertusaria crassilabra Müll.Arg.
Pertusaria lophocarpa Körb.
Pertusaria trimera (Müll.Arg.) A.W.Archer
Physcia poncinsii Hue
Porina corrugata Müll.Arg.
Porina leptalea (Durieu & Mont.) A.L.Sm.
Porina whinrayi P.M.McCarthy
Porpidia sp.
Pseudocyphellaria crocata (L.) Vain.
Punctelia pseudocoralloidea (Gyeln.) Elix & Kantvilas
Ramalina canariensis J.Steiner
Ramalina fissa (Müll.Arg.) Vain.
Ramboldia stuartii (Hampe) Kantvilas & Elix
Rhizocarpon reductum Th.Fr.
Rinodina australiensis Müll.Arg.
Rinodina blastidiata Matzer & H.Mayrhofer
Rinodina murrayi H.Mayrhofer
Rinodina oleae Bagl.
Rinodina oxydata (A.Massal.) A.Massal.
Rinodina teniswoodiorum Elix & Kantvilas
Sarcogyne regularis Körb.
Teloschistes spinosus (Hook.f. & Taylor) J.S.Murray
Tephromela alectoronica Kalb
Tephromela atra (Huds.) Hafellner
Tephromela campestricola (Nyl.) Rambold & Triebel
Thelenella tasmanica H.Mayrhofer & P.M.McCarthy
Thysanothecium scutellatum (Fr.) D.J.Galloway
Trapelia glebulosa (Sm.) J.R.Laundon
+ *Trapelia placodioides* Coppins & P.James (HO602353)
Tylothallia verrucosa (Müll.Arg.) Kantvilas
Usnea cornuta Körb.
Verrucaria fusconigrescens Nyl.
Verrucaria maura Wahlenb.
Verrucaria subdiscreta P.M.McCarthy
Xanthoparmelia australasica D.J.Galloway
Xanthoparmelia canobolasensis Elix
Xanthoparmelia mougeotina (Nyl.) D.J.Galloway
Xanthoparmelia subprolixa (Nyl. ex Kremp.) O.Blanco, A.Crespo, Elix, D.Hawksw. & Lumbsch
Xanthoparmelia verrucella (Essl.) O.Blanco, A.Crespo, Elix, D.Hawksw. & Lumbsch
Xanthoria sp.
Xanthoria ligulata (Körb.) P.James

Appendix 1.4: Terrestrial or freshwater invertebrate taxa of Spring Bay Mill

INSECTA

BLATTODEA (COCKROACHES AND TERMITES)

Blaberidae

Calolampira sp. TMAG_F12724

Blattidae

Platyzoisteria biglumis (Saussure, 1864)

Termitoidae

Termitoidae unplaced sp. TMAG_F103022

Termitoidae unplaced sp. TMAG_F103024

COLEOPTERA (BEETLES)

Aderidae

Aderidae unplaced sp. TMAG_F101185

Aderidae unplaced sp. TMAG_F102257

Anthicidae

Anthicidae unplaced sp. TMAG_F102256

Anthicidae unplaced sp. TMAG_F103189

Anthicidae unplaced sp. TMAG_F95636

Omonadus hesperi (King, 1869)

Pseudocyclodinus strictus (Erichson, 1842)

Tomoderus sp. TMAG_F102310

Trichananca victoriensis Blackburn, 1891

Anthribidae

Euciodus suturalis Pascoe, 1866

Bolboceratidae

Elephastomus proboscideus (Schreibers, 1802)

Bostrichidae

Xylion collaris (Erichson, 1842)

Xylobosca canina (Blackburn, 1893)

Brentidae

i *Exapion ulicis* (Forster, 1770)

Buprestidae

Agrilus assimilis australis Thomson, 1879

Diphucrania acuducta (Kirby, 1837)

Germanica lilliputana (Thomson, 1879)

Melobasis micondola LEVY MS NAME

Cantharidae

Chauliognathus lugubris (Fabricius, 1801)

Chauliognathus tricolor (Castelnau, 1840)

Heteromastix pauxillus (Blackburn, 1888)

Carabidae

Amblytelus brevis Blackburn, 1892

Anomotarus crudelis (Newman, 1840)

Anomotarus illawarrae (Macleay, 1873)

Carabidae unplaced sp. TMAG_F95840

Hypharpax peronii (Castelnau, 1867)

Mecyclothorax ambiguus (Erichson, 1842)

Notagonum marginellum (Erichson, 1842)

Pseudoceneus sollicitus (Erichson, 1842)

Sarothrocrepis integra Baehr, 2018

Trigonothops pacifica (Erichson, 1842)

Cerambycidae

Ancita crocogaster (Boisduval, 1835)

Ancita marginicollis (Boisduval, 1835)

Atesta tasmanica (Gahan, 1893)

Bethelium diversicorne (White, 1846)

Callidiopini unplaced sp. TMAG_F100860

Callidiopini unplaced sp. TMAG_F33390

Callidiopsis scutellaris (Fabricius, 1801)

Ectosticta cleroides (White, 1855)

Epithora dorsalis (W.S. Macleay, 1826)

Neissa inconspicua Pascoe, 1866

Omophaena taeniata Pascoe, 1866

Phacodes obscurus (Fabricius, 1787)

Phacodes personatus Erichson, 1842

Phoracantha synonyma Newman, 1840

Stenoderus suturalis (Olivier, 1795)

Chrysomelidae

Alticini unplaced sp. TMAG_F57337

Arsipoda sp. TMAG_F104713

Arsipoda sp. TMAG_F98512

Ditropidus ochropus Erichson, 1842

Ditropidus subaeneus Chapuis, 1875

Euryspa albipennis (Germar, 1848)

Monolepta unplaced

Paropsisterna bimaculata (Olivier, 1807)

Paropsisterna decolorata (Chapuis, 1877)

Paropsisterna simsoni (Blackburn, 1899)

Peltoschema DE LITTLE sp. 03

Cleridae

Eleale aspera Newman, 1841

Eleale simplex (Newman, 1840)

Eunatalis porcata (Fabricius, 1787)

Lemidia bella (Westwood, 1853)

Lemidia cicatricosa Lea, 1907

Lemidia subaenea Gorham, 1877

Parapylus bicinctus (Newman, 1842)

Pylus fatuus (Newman, 1841)

Tarsostenus hiliaris (Westwood, 1849)

Tenerus abbreviatus White, 1849

Coccinellidae

Bucolellus minutus (Blackburn, 1892)

Cleobora mellyi (Mulsant, 1850)

Coccinella transversalis Fabricius, 1781

i *Coccinella undecimpunctata* Linnaeus, 1758

Diomus notescens (Blackburn, 1889)

Diomus pumilio Weise, 1885

i *Hippodamia variegata* (Goeze, 1777)

Orcus bilunulatus (Boisduval, 1835)

Rhyzobius TFIC sp. 07

Rhyzobius TFIC sp. 15

Rhyzobius TFIC sp. 35

Stethorus sp. TMAG_F102393

Corylophidae

Corylophidae unplaced sp. TMAG_F104902

Curculionidae

Ambrosiodmus compressus (Lea, 1894)

Amycterus cf *tenebricosus* (Ferguson, 1912)

Ancyttalia TFIC sp. 01

Aoplocnemis sp. TMAG_F101856

Aoplocnemis TFIC sp. 03

Cossoninae unplaced sp. TMAG_F101180

Curculionidae unplaced sp. TMAG_F101270

Curculionidae unplaced sp. TMAG_F95604

Epamoeus ziczac Lea, 1909

Eugnomini unplaced sp. TMAG_F101234
Exithius sp. TMAG_F101726
Haplonyx casuarinae (Lea, 1909)
Mandalotus sp. TMAG_F101178
Mandalotus sp. TMAG_F101319
Mandalotus sp. TMAG_F101554

- i *Mecinus pascuorum* (Gyllenhal, 1813)
- Melanterius costipennis* Lea, 1905
- Melanterius* TFIC sp. 01
- Merimnetes oblongus* (Blanchard, 1853)
- Misophrice gloriosa* Lea, 1906
- Misophrice hispida* Pascoe, 1872
- Misophrice parallela* Blackburn, 1890
- Misophrice variabilis* Blackburn, 1890
- Mythites tuberculatus* Schoenherr, 1847
- Neolaemosaccus narinus* (Pascoe, 1872)
- Neolaemosaccus* sp. TMAG_F100880
- Orthorhinus cylindrirostris* (Fabricius, 1775)
- Orthorhinus klugii* Boheman, 1835
- Pelororhinus* TFIC sp. 01
- i *Phlyctinus callosus* (Schoenherr, 1826)
- Prostomus scutellaris* (Fabricius, 1787)
- Pseudotimarcta subterranea* (Lea, 1908)
- Storeus albosignatus* (Blackburn, 1890)
- Xyleborus saxeseni* (Ratzeburg, 1837)

Dermestidae

- i *Attagenus pellio* (Linnaeus, 1758)
- Trogoderma* sp. TMAG_F100945
- Trogoderma* sp. TMAG_F102318

Elateridae

Agrypnus impressicollis (Elston, 1924)
Agrypnus TFIC sp. 04
Agrypnus victoriae (Candèze, 1865)
Conoderus basalis (Gyllenhal, 1817)
Conoderus erubescens (Candèze, 1859)
Conoderus fabrilis (Erichson, 1842)
Conoderus TFIC sp. 05
Conoderus TFIC sp. 06
Elateridae unplaced TFIC sp. 10

Erotylidae

Thallis compta Erichson, 1842
Thallis vinula Erichson, 1842

Eucnemidae

Eucnemidae unplaced sp. TMAG_F102313
Myall clavicornis (Lea, 1919)

Histeridae

Teretrius sorellensis Blackburn, 1903

Hydrophilidae

Enochrus sp. TMAG_F101078
Ercyodes tasmanicus Hansen, 1990
Helochares tristis (W.J. Macleay, 1871)
Paracymus pygmaeus (W.J. Macleay, 1871)

Latridiidae

Cartodere satelles (Blackburn, 1888)
Corticara TFIC sp. 02
Enicmus REIKE sp. nov. 1

Meloidae

- + Nemognathini unplaced sp. TMAG_F101079

Melyridae

Carphurus punctatus Lea, 1909
Dasytes granulipennis Lea, 1909
Hypattalus exilis Lea, 1909
Melyridae unplaced sp. TMAG_F101271

Mordellidae

Glipostenoda TFIC sp. 09
Mordella TFIC sp. 01
Mordellidae unplaced TFIC sp. 01
Mordellidae unplaced TFIC sp. 04

Nitidulidae

Brachypeplus binotatus Murray, 1864
Epuraea meyricki (Blackburn, 1891)
Thalycrodes australis (Germar, 1848)
Thalycrodes pulchrum Blackburn, 1891

Oedemeridae

Oedemeridae unplaced sp. TMAG_F44510
Sessinia punctum (W.S. Macleay, 1826)

Phalacridae

Litochrus TFIC sp. 01
Phalacridae unplaced sp. TMAG_F115676
Phalacrus uniformis (Blackburn, 1891)

Ptiliidae

Acrotrichis TFIC sp. 01

Ptinidae

Deltocryptus sp. TMAG_F47346
Deltocryptus sp. TMAG_F98780
Deltocryptus TFIC sp. 01
Deltocryptus TFIC sp. 04
Dryophilodes TFIC sp. 07
Hadrobregmus australiensis Pic, 1901
Priobium multimaculatus Lea, 1924
Ptinidae unplaced sp. TMAG_F97269
Ptinus exulans Erichson, 1842

Ripiphoridae

Sitarida scabriceps Lea, 1914

Salpingidae

Neosalpingus hybridus (Erichson, 1842)

Scarabaeidae

- i *Aphodius fimetarius* (Linnaeus, 1758)
- Diphucephala colaspoides* (Gyllenhal, 1817)
- i *Euoniticellus fulvus* (Goeze, 1777)
- Heteronyx aphodioides* Blanchard, 1850
- Heteronyx cervina* (Boisduval, 1835)
- Heteronyx comans* Blackburn, 1909
- Heteronyx excisus* Blackburn, 1890
- Heteronyx oblongus* Blanchard, 1850
- + Melolonthinae unplaced sp. TMAG_F111109
- Onthophagus auritus* Erichson, 1842
- Onthophagus australis* Guérin-Méneville, 1838
- Onthophagus pronus* Erichson, 1842
- Phyllotocus macleayi* Fischer, 1823
- Phyllotocus rufipennis* (Boisduval, 1835)
- Scitala sericans* Erichson, 1842
- Telura alta* Britton, 1987

Scirtidae

Spilotocyphon spilotus (Blackburn, 1892)

Scraptiidae

Scraptia sp. TMAG_F100884

Silphidae

Ptomaphila lacrymosa (Schreibers, 1802)

Staphylinidae

Aleocharinae unplaced

Blediotrogus sp. TMAG_F41848

Cafius catenatus Fauvel, 1877

i *Carpelimus exiguus* (Erichson, 1839)

Creophilus erythrocephalus (Fabricius, 1775)

Horaeomorphus TFIC sp. 03

Paederus cruenticollis Germar, 1848

Pselaphinae unplaced sp. TMAG_F102263

Quedimimus hybridus (Erichson, 1840)

Quedimimus sp. TMAG_F100876

Quedius sp. TMAG_F98639

Quedius TFIC sp. 04

Sepedophilus sp. TMAG_F103193

Staphylininae unplaced sp. TMAG_F100878

Staphylininae unplaced sp. TMAG_F96390

Tenebrionidae

Adelium brevicorne Blessig, 1861

Adelium tenebroides Erichson, 1842

Isopteron aversum (Pascoe, 1869)

Nocar depressiusculus (Macleay, 1872)

Pachycoelia sulcicollis Boisduval, 1835

Saragus costatus (Solier, 1848)

Titaena columbina Erichson, 1842

Throscidae

Aulonothroscus elongatus (Bonvouloir, 1859)

Throscidae unplaced sp. TMAG_F98854

Trogidae

Omorgus australasiae (Erichson, 1842)

Trogossitidae

Leperina decorata (Erichson, 1842)

DERMAPTERA (EARWIGS)

Labiduridae

Labidura riparia (Pallas, 1773)

DIPTERA (FLIES)

Acroceridae

Ogcodes flavescens White, 1914

Agromyzidae

Agromyzidae unplaced sp. TMAG_F101002

Anthomyiidae

Fucellia tergina (Zetterstedt, 1845)

Asilidae

Bathypogon nigrinus Ricardo, 1912

Cerdistus caliginosus (White, 1914)

Cerdistus flavicinctus (White, 1914)

Cerdistus hyalipennis Ricardo, 1913

Cerdistus sp. TMAG_F104823

Cerdistus vittipes (Macquart, 1847)

Leptogaster sp. TMAG_F97213

Zosteria alcetas (Walker, 1849)

Australimyzae

Australimyza mc Alpinei Brake & Mathis, 2007

Bibionidae

Dilophus unplaced

Bombyliidae

Docidomyia puellaris White, 1916

Exechohypopion nigricostatum (Macquart, 1850)

Exechohypopion sp. TMAG_F46884

Geron sp. TMAG_F96709

Villa fuscicostata (Macquart, 1846)

Calliphoridae

Calliphora hilli Patton, 1925

Calliphora sp. TMAG_F101873

Calliphora stygia (Fabricius, 1782)

Onesia sp. TMAG_F98547

Chaoboridae

Chaoboridae unplaced sp. TMAG_F101045

Chaoboridae unplaced sp. TMAG_F101343

Chloropidae

Chloropidae unplaced sp. TMAG_F101356

Chloropidae unplaced sp. TMAG_F101429

Chloropidae unplaced sp. TMAG_F98226

Chloropidae unplaced sp. TMAG_F98232

Coelopidae

Amma blanchae McAlpine, 1991

Chaetocoelopa sydneyensis (Schiner, 1868)

Gluma nitida McAlpine, 1991

Rhis whitleyi McAlpine, 1991

Dolichopodidae

Dolichopodidae unplaced sp. TMAG_F100541

Dolichopodidae unplaced sp. TMAG_F100593

Dolichopodidae unplaced sp. TMAG_F102357

Heteropsilopus cingulipes (Walker, 1835)

Narabeenia spinipes Bickel, 1994

Sciapodinae unplaced sp. TMAG_F103147

Sciapodinae unplaced sp. TMAG_F97454

Empididae

Empididae unplaced sp. TMAG_F41360

Ephydriidae

Ephydrella unplaced

Ephydriidae unplaced sp. TMAG_F101059

Ephydriidae unplaced sp. TMAG_F101884

Hydrellia tritici Coquillett, 1903

Scatella albilutea Mathis & Wirth, 1981

Heteromyzidae

Diplogeomyza cf conformis McAlpine, 1967

Hybotidae

Hybotidae unplaced sp. TMAG_F101880

Hybotidae unplaced sp. TMAG_F98298

Keroplastidae

Keroplastidae unplaced sp. TMAG_F104834

Lauxaniidae

Homoneura sp. TMAG_F100519

Homoneura sp. TMAG_F101118

Incurviseta sp. TMAG_F101050

Lauxaniidae unplaced sp. TMAG_F101421

Poecilobetaerus aquilus Schneider, 1991

Poecilobetaerus schineri Hendel, 1907

Sapromyza metallica Walker, 1853

Limoniidae

Gynoplistia bella (Walker, 1835)

Limoniidae unplaced sp. TMAG_F100949

Limoniidae unplaced sp. TMAG_F101129

Lonchaeidae

Lonchaeidae unplaced sp. TMAG_F6351

Lonchopteridae

i *Lonchoptera bifurcata* Fallén, 1810

Muscidae

Coenosia sp. TMAG_F101349

Coenosia sp. TMAG_F101530

Coenosia sp. TMAG_F47332

Helina sp. TMAG_F100528

Helina sp. TMAG_F101117

Helina sp. TMAG_F12791

Muscidae unplaced sp. TMAG_F100842

Muscidae unplaced sp. TMAG_F101088

Muscidae unplaced sp. TMAG_F101111

Muscidae unplaced sp. TMAG_F101209

Muscidae unplaced sp. TMAG_F47357

Muscidae unplaced sp. TMAG_F47360

Muscidae unplaced sp. TMAG_F57515

Muscidae unplaced sp. TMAG_F97355

Pygophora apicalis Schiner, 1868

Mycetophilidae

Mycetophilidae unplaced sp. TMAG_F101881

Paraleucopidae

Paraleucopidae unplaced sp. TMAG_F103034

Phoridae

Phoridae unplaced sp. TMAG_F104830

Platystomatidae

Rivellia unplaced

Pyrgotidae

+ *Adapsilia* sp. TMAG_F101464

Cardiacera carnei (Paramonov, 1958)

Rhiniidae

Stomorbina subapicalis (Macquart, 1847)

Rhinophoridae

Axinia cf. *cornuta* Colless, 1994

Sarcophagidae

Oxysarcodexia varia (Walker, 1836)

Protomiltogramma laticeps Malloch, 1930

Sarcophaginae unplaced sp. TMAG_F100970

Sciomyzidae

Dichetophora australis (Walker, 1853)

Pherbellia juxtajavana Knutson, Manguin & Orth, 1990

Sphaeroceridae

Thoraco chaeta unplaced

Stratiomyidae

Damaromyia sp. TMAG_F102147

Odontomyia sp. TMAG_F96259

Pachygastrinae unplaced sp. TMAG_F104917

Syrphidae

Eumerus argyrogaster Ferguson, 1926

Melangyna viridiceps (Macquart, 1847)

Psilota viridis Macquart, 1847

Simosyrphus grandicornis (Macquart, 1842)

Tabanidae

Dasybasis sp. TMAG_F46925

Tachinidae

Amphibolia vidua (Guérin-Méneville, 1843)

Cylindromyia sp. TMAG_F101531

Tachinidae unplaced sp. TMAG_F100840

Tachinidae unplaced sp. TMAG_F101872

Tachinidae unplaced sp. TMAG_F102332

Tachinidae unplaced sp. TMAG_F102436

Tachinidae unplaced sp. TMAG_F103153

Tachinidae unplaced sp. TMAG_F47646

Tachinidae unplaced sp. TMAG_F95526

Tachinidae unplaced sp. TMAG_F96034

Tephritidae

Austrotephritis bushi (Hardy & Drew, 1996)

Sphenella ruficeps (Macquart, 1851)

Tephritidae unplaced sp. TMAG_F100966

i *Urophora stylata* (Fabricius, 1775)

Therevidae

Acraspisa sp. TMAG_F95917

Acupalpa rostrata Kröber, 1912

Agapophytus quatiens (White, 1916)

Anabarhynchus latifrons (Macquart, 1848)

Ectinorhynchus unplaced

Evansomyia phyciformis (White, 1916)

Neodialineura nitens (White, 1916)

Parapsilocephala bifasciata White, 1916

+ *Parapsilocephala* sp. TMAG_F100830

Tipulidae

Tipulidae unplaced sp. TMAG_F47023

HEMIPTERA (BUGS)

Acanthosomatidae

Acanthosomatidae unplaced sp. TMAG_F57818

Achilidae

Argeleusa sp. TMAG_F57755

Alydidae

Mutusca brevicornis (Dallas, 1852)

Aphididae

Cinara unplaced

Aradidae

Calisius tasmanicus Kormilev, 1963

Cercopidae

Philagra parva (Donovan, 1805)

Cicadellidae

Brunotartessus fulvus (Walker, 1851)

Cicadellidae unplaced sp. TMAG_F104906

Deltocephalinae unplaced sp. TMAG_F101521

Deltocephalinae unplaced sp. TMAG_F101629

Eurymeloides punctata (Signoret, 1850)

Putoniessa nigrella Evans, 1966

Tartessinae unplaced sp. TMAG_F47837

Tartessinae unplaced sp. TMAG_F57750

Clastopteridae

Chaetophyes compacta (Walker, 1851)

Coreidae

Agriopocoris unplaced

Corixidae

Diaprepocoris barycephala Kirkaldy, 1897

Sigara nevoissi Lansbury, 1970

Cryptorhamphidae

Cryptorhamphus orbus Stål, 1860

Cydniidae

Adrisa sp. TMAG_F98735

- Macroscytus* sp. TMAG_F101568
Macroscytus sp. TMAG_F6477
- Delphacidae**
 Delphacidae unplaced sp. TMAG_F100926
- Flatidae**
Anzora unicolor (Walker, 1862)
Siphanta cf hebes (Walker, 1851)
- Hydrometridae**
Hydrometra strigosa (Skuse, 1893)
- Lygaeidae**
Nysius sp. TMAG_F100513
- Membracidae**
Ceraon tasmaniae (Fairmaire, 1846)
- Micronectidae**
Micronecta robusta Hale, 1922
- Miridae**
Ausejanus sp. TMAG_F104910
 Miridae unplaced sp. TMAG_F101434
 Miridae unplaced sp. TMAG_F57789
 Miridae unplaced sp. TMAG_F59004
Ommatodema leanum Poppius, 1911
Pseudopantilius australis (Walker, 1873)
- Nabidae**
Nabis kinbergii Reuter, 1872
- Ochteridae**
Ochterus unplaced
- Pentatomidae**
Agonoscelis rutila (Fabricius, 1775)
Anaxilaus vesiculosus (Herrich-Schäffer, 1840)
Diaphyta rosea Bergroth, 1912
Dictyotus caenosus (Westwood, 1837)
Eribotes leana Distant, 1910
 Pentatomidae unplaced sp. TMAG_F57779
 Pentatomidae unplaced sp. TMAG_F96675
- Psyllidae**
Acizzia sp. TMAG_F100925
 Psyllidae unplaced sp. TMAG_F100766
 Psyllidae unplaced sp. TMAG_F103016
 Psyllidae unplaced sp. TMAG_F103116
- Reduviidae**
Coranus callosus Stål, 1874
Gminatus australis (Erichson, 1842)
Nyllius asperatus Stål, 1859
Peirates fuliginosus (Erichson, 1842)
Ptilocnemus femoralis Horváth, 1902
- Rhyparochromidae**
Brentiscerus putoni (White, 1878)
Dieuches notatus (Dallas, 1852)
 Rhyparochromidae unplaced sp. TMAG_F57782
 Rhyparochromidae unplaced sp. TMAG_F96950
- Ricaniidae**
Aprivesa sp. TMAG_F104753
- Saldidae**
Saldula unplaced
- Scutelleridae**
Choerocoris paganus (Fabricius, 1775)
- Tingidae**
Epimixia allocasuarina Cassis, Symonds & Branson, 2019
- HYMENOPTERA (ANTS, BEES AND WASPS)**
- Apidae**
 i *Apis mellifera* Linnaeus, 1758
- Bethylidae**
 Bethylidae unplaced sp. TMAG_F103010
 Bethylidae unplaced sp. TMAG_F103103
 Bethylidae unplaced sp. TMAG_F104854
 Bethylidae unplaced sp. TMAG_F47645
- Braconidae**
 Braconinae unplaced sp. TMAG_F95196
 Braconinae unplaced sp. TMAG_F95643
 Braconinae unplaced sp. TMAG_F96466
Callibracon sp. TMAG_F95195
- Chalcididae**
 Chalcididae unplaced sp. TMAG_F97623
- Chrysididae**
 Chrysididae unplaced sp. TMAG_F103104
 Chrysididae unplaced sp. TMAG_F56902
- Colletidae**
Leioproctus sp. TMAG_F3988
Leioproctus sp. TMAG_F3995
Leioproctus sp. TMAG_F47483
- Crabronidae**
Bembix furcata Erichson, 1842
 Crabronidae unplaced sp. TMAG_F100786
Pison spinolae Shuckard, 1838
Pison westwoodii Shuckard, 1838
Podagritus sp. TMAG_F13427
Rhopalum sp. TMAG_F102407
Sphodrotes sp. TMAG_F99795
Tachysphex unplaced
- Evaniidae**
Acanthinevania sp. TMAG_F100787
Szepligetiella sp. TMAG_F100790
- Formicidae**
Amblyopone australis Erichson, 1842
Anonychomyrma biconvexa (Santschi, 1928)
Anonychomyrma nitidiceps (E. André, 1896)
Camponotus claripes Mayr, 1876
Camponotus hartogi Forel, 1902
Camponotus terebrans (Lowne, 1865)
Iridomyrmex sp. TMAG_F101247
Myrmecia forficata (Fabricius, 1787)
Myrmecia fulvipes Roger, 1861
Myrmecia pilosula Smith, 1858
Ochetellus sp. TMAG_F98800
Pheidole unplaced
Polyrhachis patiens Santschi, 1920
Prolasius unplaced
Rhytidoponera tasmaniensis Emery, 1898
- Halictidae**
 Halictidae unplaced sp. TMAG_F101690
 Halictidae unplaced sp. TMAG_F101738
- Ichneumonidae**
Ceratomansa unplaced
Echthromorpha intricatoria (Fabricius, 1804)
Eriostethus unplaced
Heteropelma sp. TMAG_F63139
 Ichneumonidae unplaced sp. TMAG_F100134

Ichneumonidae unplaced sp. TMAG_F102418
 Ichneumonidae unplaced sp. TMAG_F103003
 Ichneumonidae unplaced sp. TMAG_F103115
 Ichneumonidae unplaced sp. TMAG_F47672
 Ichneumonidae unplaced sp. TMAG_F98739
Netelia unplaced

Megalyridae

Megalyra fasciipennis Westwood in Griffith, 1832

Mutillidae

+ *Ephutomorpha* sp. TMAG_F103101
Odontomyrme cordatiformis Lelej, 1983

Pompilidae

Ageniellini unplaced
Cryptocheilus australis (Guérin-Méneville, 1838)
Ctenostegus unplaced
 Pompilinae unplaced sp. TMAG_F101313
 Pompilinae unplaced sp. TMAG_F102510
Turneromyia unplaced

Proctotrupidae

Austroserphus albofaciatus Dodd, 1933

Sphecidae

Podalonia tydei (Le Guillou, 1841)
Prionyx unplaced

Tiphiidae

Anthobosca sp. TMAG_F103102
 Thynninae unplaced sp. TMAG_F100934
 Thynninae unplaced sp. TMAG_F102757
 Thynninae unplaced sp. TMAG_F58807
 Thynninae unplaced sp. TMAG_F97082

LEPIDOPTERA (MOTHS AND BUTTERFLIES)

Anthelidae

Anthela cnecias Turner, 1921
Anthela repleta (Walker, 1855)

Carposinidae

Sosineura mimica (Lower, 1893)

Cosmopterigidae

Cosmopterigidae unplaced sp. TMAG_F118048
 Cosmopterigidae unplaced sp. TMAG_F118059
 Cosmopterigidae unplaced sp. TMAG_F118050
 Cosmopterigidae unplaced sp. TMAG_F118051
 Cosmopterigidae unplaced sp. TMAG_F118052
 Cosmopterigidae unplaced sp. TMAG_F118053
 Cosmopterigidae unplaced sp. TMAG_F118054
 Cosmopterigidae unplaced sp. TMAG_F118055
 Cosmopterigidae unplaced sp. TMAG_F118056
 Cosmopterigidae unplaced sp. TMAG_F118057
 Cosmopterigidae unplaced sp. TMAG_F118058
 Cosmopterigidae unplaced sp. TMAG_F118375
Limnaecia sp. TMAG_F118311
Macrobathra nephelomorpha Meyrick, 1886
Macrobathra sp. TMAG_F118025

Cossidae

Culama australis Walker, 1856
Endoxyla lituratus (Donovan, 1805)

Crambidae

Crambidae unplaced sp. TMAG_F118317
 Crambidae unplaced sp. TMAG_F118320
 Crambidae unplaced sp. TMAG_F118325

Crambidae unplaced sp. TMAG_F118326
 Crambidae unplaced sp. TMAG_F118327
 Crambidae unplaced sp. TMAG_F118328
 Crambidae unplaced sp. TMAG_F118330
Eudonia sp. TMAG_F118243
Metasia capnochroa (Meyrick, 1884)
Ptochostola microphaeellus (Walker, 1866)
Scoparia plagiotis Meyrick, 1887
Scoparia spelaea Meyrick, 1885

Depressariidae

Depressariidae unplaced sp. TMAG_F118351
 Depressariidae unplaced sp. TMAG_F118354
 Depressariidae unplaced sp. TMAG_F118355
 Depressariidae unplaced sp. TMAG_F118356
 Depressariidae unplaced sp. TMAG_F118358
 Depressariidae unplaced sp. TMAG_F118359

Elachistidae

Elachista gerasmia (Meyrick, 1889)
Elachista sp. TMAG_F118015
Elachista sp. TMAG_F118016
Elachista sp. TMAG_F118018
Elachista sp. TMAG_F118019
Elachista sp. TMAG_F118020
Elachista sp. TMAG_F118022

Erebidae

Meyrickella ruptellus (Walker, 1863)
Palaeosia bicosta (Walker, 1854)
Paramsacta marginata (Donovan, 1805)
Phaeophlebosia furcifera (Walker, 1854)
Praxis edwardsii Guenée, 1852
Praxis porphyretica Guenée, 1852
Scoliacma adrasta (Turner, 1940)
Spilosoma glatignyi (Le Guillou, 1841)

Gelechiidae

Gelechiidae unplaced sp. TMAG_F118340
 Gelechiidae unplaced sp. TMAG_F118343
 Gelechiidae unplaced sp. TMAG_F118347
 Gelechioidea unplaced
 Gelechioidea unplaced sp. TMAG_F118360
 Gelechioidea unplaced sp. TMAG_F118361
 Gelechioidea unplaced sp. TMAG_F118362
 Gelechioidea unplaced sp. TMAG_F118363
 Gelechioidea unplaced sp. TMAG_F118368
 Gelechioidea unplaced sp. TMAG_F118370

Geometridae

Anachloris subochraria (Doubleday, 1843)
Capusa senilis Walker, 1857
Cassythaphaga petrochroa (Lower, 1897)
Chlorocoma carenaria (Guenée, 1857)
Chlorocoma externa (Walker, 1861)
Chlorocoma vertumnaria (Guenée, 1857)
Cleora sp. TMAG_F107069
Corula geometroides Walker, 1856
Crypsiphona oculitaria (Donovan, 1805)
Cyneoterpna wilsoni (Felder & Rogenhofer, 1875)
Dissomorphia australiaria (Guenée, 1857)
Ectropis fractaria (Guenée, 1857)
Epidesmia hypenaria (Guenée, 1857)
Epyaxa subidaria (Guenée, 1857)

Gastrina cristaria Guenée, 1857
Gastrinodes bitaeniaria (Le Guillou, 1841)
 Hydriomenini unplaced *severata* (Guenée, 1857)
 Hydriomenini unplaced *trygodes* (Meyrick, 1891)
Hypobapta percomptaria (Guenée, 1857)
Hypobapta tachyhalotaria Hausmann, Sommerer, Rougerie & Hebert, 2009
Idiodes apicata Guenée, 1857
Idiodes siculoides (Walker, 1860)
Melanodes anthracitaria Guenée, 1857
Microdes villosata Guenée, 1857
Nearcha curtaria (Guenée, 1857)
Nisista serrata (Walker, 1857)
Oenochroma vinaria Guenée, 1857
Parosteodes fictiliaria (Guenée, 1857)
Phelotis cognata (Walker, 1860)
Phrissogonus laticostata (Walker, 1862)
Poecilasthena anthodes (Meyrick, 1891)
Prasinocyma semicrocea (Walker, 1861)
Psilosticha attacta (Walker, 1860)
Rhynchopsota delogramma Lower, 1903
Scopula optivata (Walker, 1861)
Scopula rubraria (Doubleday, 1843)
Syneora mundifera (Walker, 1860)
Taxeotis intermixtaria (Walker, 1861)
Taxeotis intextata (Guenée, 1857)

Glyphipterigidae

Glyphipterix sp. TMAG_F118029

Gracillariidae

Acrocercops sp. TMAG_F19850
 Gracillariinae unplaced sp. TMAG_F118364

Hesperiidae

Taractrocera papyria (Boisduval, 1832)

Lasiocampidae

Pararguda nasuta (Lewin, 1805)
Pernattia pusilla (Donova, 1805)

Lecithoceridae

Lecithocera terrigena (Meyrick, 1904)

Lyonetiidae

Dascia sp. TMAG-F118377

Noctuidae

Agrotis porphyricollis Guenée, 1852
Diarsia intermixta (Guenée, 1857)
Ectopatria “DPILMbrownshortpecten”
Ectopatria sp. TMAG_F118227
Ectopatria sp. TMAG_F8523
 Hadenini unplaced species inquirenda *ligniplena* Walker, 1857
Leucania uda Guenée, 1852
 Noctuidae unplaced sp. TMAG_F118234
 Noctuinae unplaced sp. TMAG_F118236
Persectania ewingii (Westwood, 1839)
Proteuxoa melanographa (Turner, 1908)
Proteuxoa microspila (Lower, 1902)
Proteuxoa sanguinipuncta (Guenée, 1857)
Proteuxoa sp. nr *flexirena* (Walker, 1865)

Nolidae

Nola albalis (Walker, 1866)

Notodontidae

Epicoma melanospila (Wallengren, 1860)
Hobartina amblyiodes (Turner, 1931)
Neola semiaurata Walker, 1855
Soroma bicolor Walker, 1855

Nymphalidae

Geitoneura klugii (Guérin-Méneville, 1830)
Heteronympha merope (Fabricius, 1775)
Junonia villida Fabricius, 1787

Oecophoridae

Acanthodela erythrosema (Meyrick, 1886)
Agriophara sp. TMAG_F118024
Barea sp. TMAG_F118304
Eochrois callianassa (Meyrick, 1883)
Euchaetis inceptella (Walker, 1864)
Garrha unplaced
Heteroteucha translata (Walker, 1864)
Oecophorinae genus nr *Atheropla* unplaced
Oecophorinae unplaced sp. TMAG_F118250
Oecophorinae unplaced sp. TMAG_F118253
Oecophorinae unplaced sp. TMAG_F118257
Oecophorinae unplaced sp. TMAG_F118258
Oecophorinae unplaced sp. TMAG_F118260
Oecophorinae unplaced sp. TMAG_F118271
Oecophorinae unplaced sp. TMAG_F118274
Oecophorinae unplaced sp. TMAG_F118276
Oecophorinae unplaced sp. TMAG_F118278
Oecophorinae unplaced sp. TMAG_F118279
Oecophorinae unplaced sp. TMAG_F118283
Oecophorinae unplaced sp. TMAG_F118284
Oecophorinae unplaced sp. TMAG_F118286
Oecophorinae unplaced sp. TMAG_F118287
Oecophorinae unplaced sp. TMAG_F118288
Oecophorinae unplaced sp. TMAG_F118289
Oecophorinae unplaced sp. TMAG_F118293
Oecophorinae unplaced sp. TMAG_F118294
Oecophorinae unplaced sp. TMAG_F118295
Oecophorinae unplaced sp. TMAG_F118296
Oecophorinae unplaced sp. TMAG_F118299
Philobota atmobola Meyrick, 1884
Philobota productella (Walker, 1864)
Stathmopoda chalcotypa Meyrick, 1897
Tortricopsis uncinella (Zeller, 1854)
Wingia group sp. TMAG_F118296
Wingia group sp. TMAG_F118335
Wingia group sp. TMAG_F118336

Opistegidae

Opistega sp. TMAG_F118031

Pieridae

i *Pieris rapae* (Linnaeus, 1758)

Psychidae

Psychidae unplaced sp. TMAG_F107988

Pyalidae

Faveria tritalis (Walker, 1863)
Gauna aegusalis (Walker, 1859)
 Pyralidae unplaced sp. TMAG_F118316
Spectrotrota fimbrialis Warren, 1891
Hippotion scrofa (Boisduval, 1832)

Tineidae

- Edosa ochranthes* (Meyrick, 1893)
- Tineidae unplaced sp. TMAG_F118331
- Tineidae unplaced sp. TMAG_F118334
- Tineidae unplaced sp. TMAG_F118378

Tortricidae

- Acropolitis ergophora* Meyrick, 1910
- Epiphyas postvittana* (Walker, 1863)
- Epitymbia isoscelana* (Meyrick, 1881)
- Eucosmini unplaced sp. TMAG_F118043
- Olethreutinae unplaced sp. TMAG_F118041

Yponomeutidae

- Yponomeutidae unplaced sp. TMAG_F118179
- Yponomeutidae unplaced sp. TMAG_F118180

Xyloryctidae

- Araeostoma aenicta* Turner, 1917
- Araeostoma* ANIC sp. 01
- Xylorycta calligramma* (Meyrick, 1890)

Zygaenidae

- Pollanisus viridipulverulenta* (Guérin-Ménéville, 1839)

NEUROPTERA (LACEWINGS AND ALLIES)

Chrysopidae

- Apertochrysa edwardsi* (Banks, 1940)

Hemerobiidae

- Micromus tasmaniae* (Walker, 1860)

Mantispidae

- Campion* unplaced

Myrmeleontidae

- Mossega indecisa* (Banks, 1913)

ODONATA (DAMSELFLIES AND DRAGONFLIES)

Coenagrionidae

- Austroagrion cyane* (Selys, 1876)
- Ischnura aurora* (Brauer, 1865)

ORTHOPTERA (GRASSHOPPERS AND CRICKETS)

Acrididae

- Austroicetes vulgaris* (Sjöstedt, 1931)
- Cryptobothrus chrysophorus* Rehn, 1907
- Gastrimargus musicus* (Fabricius, 1775)
- Goniaea australasiae* (Leach, 1814)
- Macrotona australis* (Walker, 1870)
- Phaulacridium vittatum* (Sjöstedt, 1920)
- Schizobothrus flavovittatus* Sjöstedt, 1921

Gryllacrididae

- Kinermania ambulans* (Erichson, 1842)

Tetrigidae

- Paratettix argillaceus* (Erichson, 1842)

Tettigoniidae

- Conocephalus* unplaced
- Zaprochilus australis* (Brullé, 1835)

Trigonidiidae

- Bobilla* unplaced
- Trigonidium albiovittata* (Chopard, 1951)

PSOCODEA (LICE)

Myopsocidae

- Myopsocus* sp. TMAG_F104739

THYSANOPTERA (THRIPS)

Phlaeothripidae

- Idolothrips spectrum* Haliday, 1852

ARANEAE (SPIDERS)

Lycosidae

- * *Tasmanicosa godeffroyi* (L. Koch, 1865)

Theridiidae

- i* *Latrodectus hasselti* Thorell, 1870

Pisauridae

- * *Dolomedes* unplaced

CRUSTACEA: ISOPODA (SLATERS)

Porcellionidae

- i *Porcellio scaber* Latreille, 1804

MOLLUSCA: GASTROPODA (SNAILS AND SLUGS)

Bothriembryontidae

- Bothriembryon tasmanicus* (Pfeiffer, 1853)

Geomitridae

- i *Prietocella barbara* (Linnaeus, 1758)

Appendix 1.5: Marine invertebrate taxa of Spring Bay Mill

CRUSTACEA: BRACHYURA (CRABS)

Hymenosomatidae

- Haliscarcinus innominatus* Richardson, 1949

Pilumnidae

- Pilumnus monilifera* Haswell, 1882

CRUSTACEA: ISOPODA (SLATERS)

Ligiidae

- Ligia australiensis* Dana, 1853

CRUSTACEA: CIRRIPIEDIA (BARNACLES)

Balanidae

- Austromegabalanus nigrescens* (Lamarck, 1818)
- i *Balanus trigonus* Darwin, 1854

BRYOZOA (LACE-CORALS)

Arachnopusiidae

- Arachnopusia* unplaced

Bugulidae

- Bugula* unplaced
- i *Bugulina flabellata* (Thompson in Gray, 1848)
- Virididentula dentata* (Lamouroux, 1816)

Candidae

- Amastigia texta* (Lamarck, 1816)
- Emma* unplaced
- Tricellaria inopinata* D'Hondt & Occhipinti Ambrogio, 1985

Membraniporidae

- i *Membranipora membranacea* (Linnaeus, 1767)

Scrupariidae

- Scruparia ambigua* (D'Orbigny, 1847)

Watersiporidae

- Watersipora subtorquata* (D'Orbigny, 1852)

Vesiculariidae

- Amathia* unplaced
- Actiniaria* unplaced

CNIDARIA: ANTHOZOA (ANEMONES)

Actiniidae

- * *Actinia tenebrosa* Farquhar, 1898

Anthothelidae

- Erythropodium hicksoni* (Utinomi, 1971)

Corallimorphidae

- Corynactis australis* Haddon & Duerden, 1896

CNIDARIA: HYDROZOA (HYDROIDS)

Plumulariidae

- Plumularia* unplaced

CHORDATA: TUNICATA (SEA-SQUIRTS)

Ascidiidae

- i *Ascidiella aspersa* (Mueller, 1776)

Styelidae

- Asterocarpa humilis* (Heller, 1878)
- Botrylloides perspicuus* Herdman, 1886
- Polycarpa* unplaced

MOLLUSCA: BIVALVIA (CLAMS)

Cleidotheriidae

- * *Cleidotheria albidus* (Lamarck, 1819)

Cyamiidae

- * *Perrierina bernardi* (Tate & May, 1901)

Hiatellidae

- Hiatella australis* (Lamarck, 1818)

Montacutiidae

- * *Mysella donaciformis* Angas, 1878

Mytilidae

- * *Brachidontes erosus* (Lamarck, 1819)
- i *Mytilus galloprovincialis* Lamarck, 1819

Ostreidae

- *i *Magallana gigas* (Thunberg, 1793)
- Ostrea angasi* G. B. Sowerby II, 1871

Psammobiidae

- * *Hiatula biradiata* (Wood, 1815)

Pteriidae

- Vulsella ovata* Lamarck, 1819

Tellinidae

- * *Macomona deltoidalis* (Lamarck, 1818)

Veneridae

- * *Eumarcia fumigata* (G. B. Sowerby II, 1853)
- * *Irus carditoides* (Lamarck, 1818)
- * *Katehysia rhytiphora* (Lamy, 1935)
- * *Katehysia scalarina* (Lamarck, 1818)
- * *Notopaphia grisea* (Lamarck, 1818)

MOLLUSCA: CEPHALOPODA (CUTTLEFISH)

Sepiidae

- * *Sepia apama* Gray, 1849

MOLLUSCA: POLYPLACOPHORA (CHITONS)

Chitonidae

- Sypharochiton pelliserpentis* (Quoy & Gaimard, 1835)

MOLLUSCA: GASTROPODA (SNAILS AND SLUGS)

Batillariidae

- * *Zeacumantus diemenensis* (Quoy & Gaimard, 1834)

Chromodorididae

- Ceratosoma brevicaudatum* Abraham, 1876

Columbellidae

- * *Anachis atkinsoni* (Tenison-Woods, 1876)
- * *Mitrella leucostoma* (Gaskoin, 1852)

Dialidae

- * *Diala suturalis* (A. Adams, 1853)

Fasciariidae

- * *Australaria australasia* (Perry, 1811)

Haliotidae

- * *Halotis rubra* Leach, 1814

Litiopidae

- * *Alaba monile* A. Adams, 1862

Littorinidae

- * *Afrolittorina praetermissa* (May, 1909)
- * *Austrolittorina unifasciata* (Gray, 1826)

Lottiidae

- * *Patelloida alticostata* (Angas, 1865)

Muricidae

- Agnewia tritoniformis* (Blainville, 1832)

Nacellidae

- * *Cellana solida* (Blainville, 1825)

Nassariidae

- * *Nassarius pauperatus* (Lamarck, 1822)
- * *Nassarius pyrrhus* (Menke, 1843)

Neritidae

- * *Nerita melanotragus* E. A. Smith, 1884

Pyramidellidae

- Turbonilla mariae* Tenison-Woods, 1876

Phasianellidae

- * *Phasianella australis* (Gmelin, 1791)

Ranellidae

- * *Cabestana spengleri* (Perry, 1811)
- * *Charonia lampas rubicunda* (Linnaeus, 1758)
- * *Cymatiella verrucosa* (Reeve, 1844)

Siphonariidae

- * *Siphonaria diemenensis* Quoy & Gaimard, 1833
- * *Siphonaria funiculata* Reeve, 1856

Triphoridae

- Costatophora granifera* (Brazier, 1894)

Trochidae

- * *Austrocochlea brevis* Parsons & Ward, 1994
- * *Austrocochlea constricta* (Lamarck, 1822)
- * *Diloma concameratum* (W. Wood, 1828)

Turbinidae

- Lunella undulata* (Lightfoot, 1786)

Appendix 1.6: Incidental observations of vertebrate taxa at Spring Bay Mill

BIRDS

- Acanthiza pusilla* (Shaw, 1790)
- Anas superciliosa* Gmelin, 1789
- Anthochaera chrysoptera* (Latham, 1801)
- Anthochaera paradoxa* (Daudin, 1800)
- Aquila audax* (Latham, 1801)
- Artamus cyanopterus* (Latham, 1801)
- i *Carduelis carduelis* (Linnaeus, 1758)
- i *Carduelis chloris* (Linnaeus, 1758)
- Chrysococcyx lucidus* (Gmelin, 1788)
- Colluricincla harmonica* (Latham, 1801)
- Coracina novaehollandiae* (Gmelin, 1789)
- Corvus tasmanicus* Mathews, 1912
- Cracticus torquatus* (Latham, 1801)
- Cuculus pallidus* (Latham, 1801)
- Gymnorhina tibicen* (Latham, 1801)
- Haematopus longirostris* Vieillot, 1817
- Haliaeetus leucogaster* Gmelin, 1788
- Hirundo neoxena* Gould, 1843
- Hirundo nigricans* (Vieillot, 1817)
- Larus novaehollandiae* (Stephens, 1826)
- Manorina melancephala* (Latham, 1801)
- Pardalotus striatus* (Gmelin, 1789)
- i *Passer domesticus* (Linnaeus, 1758)
- Phalacrocorax fuscescens* (Vieillot, 1817)
- Phaps chalcoptera* (Latham, 1790)
- Rhipidura fuliginosa* (Sparrman, 1787)
- Strepera versicolor* (Latham, 1801)
- i *Sturnus vulgaris* Linnaeus, 1758
- Thalasseus bergii* (Lichtenstein, 1823)
- i *Turdus merula* Linnaeus, 1758
- Zosterops lateralis* (Latham, 1801)

FROGS

- Limnodynastes dumerilii* Peters, 1863