The Molluscs of the Southern Islands, Singapore

Rachel Y. Y. Mark, Geoffrey W. H. Davison, Bryan P. I. Leong,
R. Y. Nicholas Seng & Y. H. Jonathan Tan

National Parks Board, 1 Cluny Road, 259569 Singapore

ABSTRACT. The Southern Islands Biodiversity Survey (SIBS) in 2020–2022 succeeded in compiling a list of 611 marine and intertidal molluscs, and nine terrestrial and freshwater molluscs, from 16 locations. The 611 species represent almost three-quarters of those known from Singapore, highlighting the conservation significance of the Southern Islands. Particular attention is drawn to Pulau Semakau, supporting nearly 40% of all recorded Singapore molluscs. The resulting database should allow data mining for correlative analyses and ecological comparisons.

Keywords: Bivalvia, Cephalopoda, Gastropoda, tropical marine diversity.

Introduction

Molluscs are highly diverse in morphology, habitat and behaviour, occurring in the sea, in freshwater and on land. Their diversity ranges from aquatic and predominantly filter-feeding bivalves with two opposing but hinged sections of shell, to ubiquitous gastropods with a coiled shell into which they can typically retreat, to marine predatory cephalopods that have a shell (e.g., nautilus) or lack one (e.g., squids and octopus). Some are sessile, others crawling or burrowing, and others free-swimming. Some are as colourful as butterflies (e.g., nudibranchs), others are notoriously venomous (e.g., cone shells, some octopus species), while others show evidence of high intelligence and cognition.

Molluscs are economically important as foods such as cockles and oysters, have great potential for biomedical research and applications, or have value in water remediation or reef building, but a few can cause economic damage such as burrowing in marine timbers or acting as intermediate hosts in various parasites' life cycles.

A long history of studying molluscs in Southeast Asia was supported by the interests of shell collectors (Dillwyn, 1817; Dance, 1980). Work on molluscs in Singapore waters has been extensive (Purchon & Purchon, 1981; Tan & Woo, 2010) but is still incomplete and often not detailed enough to attribute records to particular islands. A recent comprehensive study of marine biodiversity in the Singapore Strait covered shelled gastropod molluscs from 67 localities (Sampanich & Tan, 2016), including nearly all of those visited by the Southern Islands Biodiversity Survey (SIBS) in 2020–2021 (Tan et al., 2025).

This chapter summarises the molluscan diversity of the Southern Islands based on data compiled from published and unpublished literature, and SIBS intertidal field surveys. The work of Sampanich & Tan (2016) was an important part of the published literature sources. Site-specific distribution can provide a stronger basis for conservation and management as well as comparison for the future monitoring of populations.

Methods and Materials

Intertidal surveys were conducted at 16 sites at Pulau Biola, Pulau Berkas, Sentosa (formerly Pulau Blakang Mati), Pulau Hantu, Pulau Jong, Pulau Salu, Pulau Satumu (Raffles Lighthouse), Pulau Sakijang Bendera (Saint John's Island), Pulau Sakijang Pelepah (Lazarus Island), Pulau Semakau, Pulau Seringat (now merged with Lazarus Island), Pulau Subar Darat (Small Sister's Island), Pulau Tembakul (Kusu Island), Pulau Tekukor, and Terumbu Pandan (Cyrene Reef). The surveys were conducted between August 2020 and March 2022 during low spring tides, typically during early morning hours (6:00am to 10:00am) or during the evening (4:00pm to 8:00pm). Intertidal surveys were not conducted at Keppel Island and Pulau Subar Laut (Big Sister's Island), although other aspects of biodiversity at those islands were included in the SIBS study (Tan et al., 2025). Of these Pulau Biola, Pulau Berkas, Pulau Salu and Sentosa were not covered by Sampanich & Tan (2016)

A reconnaissance trip was organised for each site to identify suitable areas for laying out transects that would encompass a wide diversity of intertidal habitat types and maximise species encounters. During the actual survey, a 30m line perpendicular to the shoreline was laid across the intertidal zone, and three sets of 25 m line transects were placed parallel to the shore. There was one set each within the zones 0–10m, 10–20m and 20–30m from the shoreline, so as to ensure sampling covered the upper, middle, and lower shore. Each transect set/shore level was surveyed by a team of 3-5 surveyors, and for each transect five quadrats (50cm by 50cm) were placed along either side of the transect tape at intervals determined via a random number generator. Tan et al. (2025) provides an illustration of the layout of transects and quadrats. All living morphospecies in the quadrat were photographed for record keeping and identification to the lowest possible taxonomic level. Another team of 5-10 surveyors separately patrolled the intertidal zone beyond the vicinity of the transects to take photographs of as many morphospecies as possible for later identification.

No specific methods were employed to search for terrestrial molluscs. Living specimens or empty shells or shell fragments were collected and identified if they were encountered during searches for other terrestrial fauna.

Mollusc records were also compiled from published literature and NParks internal records. The earliest publication included in the literature review was published in 2007, although there may be earlier unpublished records drawn from the internal database, with the latest literature included published in 2020. Scientific names were standardised according to the Singapore Red Data Book (Tan & Tan, 2024a).

Results

The data compilation from surveys and other sources resulted in a database of 133 bivalves (Appendix 2), 18 cephalopods (Appendix 3), 459 marine or intertidal gastropods (Appendix 4), nine terrestrial or freshwater gastropods identified to species/morphospecies level (Appendix 5), and one polyplacophoran (Appendix 6). The total number of mollusc species was 620, and the results are summarised in Table 1. An additional 171 taxa of molluscs were identified only to genus level (Appendix 7), while the full SIBS database contains more records of mollusc taxa at the family level and above (see Tan et al, 2025a).

Table 1. Summary of total marine mollusc fauna, showing species/morphospecies numbers in three classes, in the vicinity of 16 locations in the Southern Islands of Singapore.

Site	Bivalvia	Cephalopoda	Gastropoda	Polyplacophora	Total
BIO Pulau Biola	8	3	42	0	53
BRK Pulau Berkas	2	2	12	0	15
CYR Cyrene Reef	7	5	99	0	104
HNT Pulau Hantu	26	8	169	1	194
JNG Pulau Jong	11	2	107	0	114
KEP Keppel Island	3	1	13	0	16
KUS Kusu Island	8	6	75	0	87
LAZ Lazarus	10	2	100	1	108
RAL Raffles Lighthouse	9	1	72	0	79
SAL Pulau Salu	3	1	16	0	19
SIS Sisters' Islands	30	7	145	0	176
SJI St John's Island	20	5	141	1	160
SMK Pulau Semakau	93	8	224	0	316
SNT Sentosa	31	6	89	1	120
TKR Pulau Tekukor	9	2	63	0	69
TPS Terumbu Pempang	13	4	41	0	55

Between two and 93 species of bivalves were listed for the 16 sites in Appendix 1, with a mean of 17.8 species per site. However, eight of the sites each had ten or fewer species, with one outstanding site (Pulau Semakau) having 95 species. The numbers of cephalopods ranged from one to eight, Pulau Semakau and Pulau Hantu being the richest sites, with a mean of 3.9 species per site. The numbers of gastropods ranged from 13 to 224 species, again with Pulau Semakau the richest (224) followed by Pulau Hantu (169), and Pulau Berkas (13) and Keppel (13) being the poorest.

Of the 135 bivalves, 75 species (56%) were listed at only a single locality. Only two bivalves were found at more than 50% of sites, these being the conspicuous Boring Giant

Clam (*Tridacna crocea*) (ten sites) and Fluted Giant Clam (*Tridacna squamosa*) (15 sites). However, the Small Giant clam (*Tridacna maxima*) was only found at one site, suggesting that it is truly scarce. Of the 18 cephalopods, seven (39%) were listed at single localities, and the most widely recorded was the reef octopus (Family Octopodidae sp "reef") at 14 of the 16 sites.

Of the 459 gastropods, 225 (49%) were listed at only a single locality. There were 39 species listed at more than half of the 16 sites, and 12 species (2.6%) were listed at more than 80% of the sites. These 12 included several that are large and easily recognisable, hence unlikely to be overlooked (e.g., *Turbo intercostalis*, *Tectus niloticus* and *Lambis lambis*, the latter the mostly widely recorded gastropod at 15 sites), but also included smaller shelled gastropods and some nudibranchs (*Doriprismatica atromarginata*, *Jorunna funebris*).

The lone polyplacophoran identified to species level (Acanthopleura gemmata) was found at four sites. The number of species that were represented at differing numbers of sites are shown in Table 2.

Table 2. Number of marine mollusc species found at given number of sites in the Southern Islands of Singapore, by class and total. 304 species were only listed from a single site, and no species was found at all 16 sites.

No. of sites	Bivalvia	Cephalopoda	Gastropoda	Polyplacophor	Total
1	75	7	225	0	307
2	30	4	71	0	105
3	8	1	36	0	45
4	5	2	23	1	31
5	3	0	21	0	24
6	3	2	25	0	30
7	4	0	8	0	12
8	2	0	9	0	11
9	0	0	7	0	7
10	1	1	9	0	11
11	0	0	5	0	5
12	0	0	6	0	6
13	0	0	6	0	6
14	0	1	5	0	6
15	1	0	1	0	2
16	0	0	0	0	0

Discussion

The 611 marine and intertidal molluscs represent almost three-quarters (72%) of those ever recorded in Singapore by Tan & Woo (2010). Under-represented were some mangrove specialists, rock and mud-living forms such as Onchidiidae and forms that were historically more abundant, e.g. *Conus* spp. Literature records giving vague localities such as 'Singapore' could not be included in the database as they were not attributable to the Southern Islands in general or in particular, even if present there. While the SIBS intertidal surveys ostensibly added only one bivalve (*Volachlamys singaporina*) and five gastropods (*Indothais lacera*, *Monetaria moneta*, *Nassarius teretiusculus*, *Phestilla lugubris* and *Samla bicolor*) to the list of molluscs in the Southern Islands, even this is probably an exaggeration as the species are not new to Singapore waters and the likely contribution of SIBS has been to add a little precision to the naming of localities.

On the other hand, SIBS work was able to add a number of localities to the recorded distribution of various species. More importantly, the compilation of past records is a testament to the thoroughness of past work and now gives a fuller picture of molluscan distribution than has been possible before. The high proportion of species recorded from only one out of 16 locations (50%, or 307 out of 611 marine and intertidal species) implies that the intensity of coverage still needs to be improved. In particular, low species totals for Pulau Berkas (a reef not an island, in spite of its name) and Pulau Salu, and perhaps even for Pulau Biola, Keppel Island, and the Terumbu Pempang reefs, suggest that more species could be found there, new to the localities but not new to the overall Southern Islands waters. The large number of mollusc taxa that could not be identified to species/ morphospecies level (171 were identified to only genus level; see Appendix 7) also indicates that difficulties in taxonomic identification would have significantly reduced the apparent species richness.

As with some other taxonomic groups, Pulau Semakau stands out remarkably for its rich fauna: it had 224 gastropods and 93 bivalves (respectively 33% and 200% more than the next richest sites surveyed). It is not clear to what extent the high totals at Pulau Semakau result from intensity of collecting, though even the rather well studied Sisters' Islands and St John's Island have only 63–65% as many gastropods and 21–33% as many bivalves, suggesting there is a real difference.

The wide distribution of the charismatic and nationally threatened giant clams *Tridacna squamosa* (15 sites) and *Tridacna crocea* (10 sites) is heartening, and emphasises the importance of the Southern Islands as their stronghold in Singapore; however, based on our observations and those by Neo & Todd (2012), they were in very low densities. This may make it difficult for these sessile organisms to successfully spawn and reproduce, and it is likely that the populations in Singapore are dependent on larvae dispersing from elsewhere (Neo et al., 2013). While giant clams are known ecosystem engineers (Neo et al., 2015), the ecological role they play in Singapore's coral reefs may be limited given their low densities, and continued conservation work is needed to ensure their survival.

The few terrestrial and freshwater molluscs encountered are primarily species that are easily transported by human agency and may not be native to the islands they inhabit. More species will probably be found in future.

The overwhelming contribution of literature and historical records to the Appendices further indicates that surveys round some of the newly included islands such as Pulau Berkas and Pulau Salu may have been insufficient so far. Nevertheless, the online database provided

by the SIBS project provides an information source that will allow future data mining and quantitative analysis. For example, dietary groups of molluscs could be correlated with overall habitat area and quality, species composition with current directions and strengths, island history, proximity to reclamation or outfalls, according to the needs of individual researchers.

References

Dance, S.P. (1980). Hugh Cuming (1791–1865) Prince of collectors. *Journal of the Society for the Bibliography of Natural History* 9: 477–501, https://doi.org/10.3366/jsbnh.1980.9.4.477

Dillwyn, L.W. (1817). *A Descriptive Catalogue of Recent Shells, Arranged According to the Linnaean Method; with Particular Attention to the Synonymy*. 2 vols. J. & A. Arch, London.

Neo, M.L. & Todd, P.A. (2012) Population density and genetic structure of the giant clams *Tridacna crocea* and *T. squamosa* on Singapore's reefs. *Aquatic Biology* 14: 265–275.

Neo, M.L., Erftemeijer, P.L.A., van Beek, J.K.L., van Maren, D.S., Teo, S.L.-M. & Todd, P.A. (2013) Recruitment constraints in Singapore's fluted giant clam (*Tridacna squamosa*) population—A dispersal model approach. *PLoS ONE* 8(3): p.e58819, https://doi.org/10.1371/journal.pone.0058819

Neo, M. K., Eckman, W., Vincetuan, K., Teo, S.L.-M. & Todd, P.A. (2015) The ecological significance of giant clams in coral reef ecosystems. *Biological Conservation* 181: 111–123.

Purchon, R.D. & Purchon, D.E.A. (1981). The marine shelled Mollusca of West Malaysia and Singapore, Part 1. General introduction and an account of the collecting stations. *Journal of Molluscan Studies* 47: 290–312.

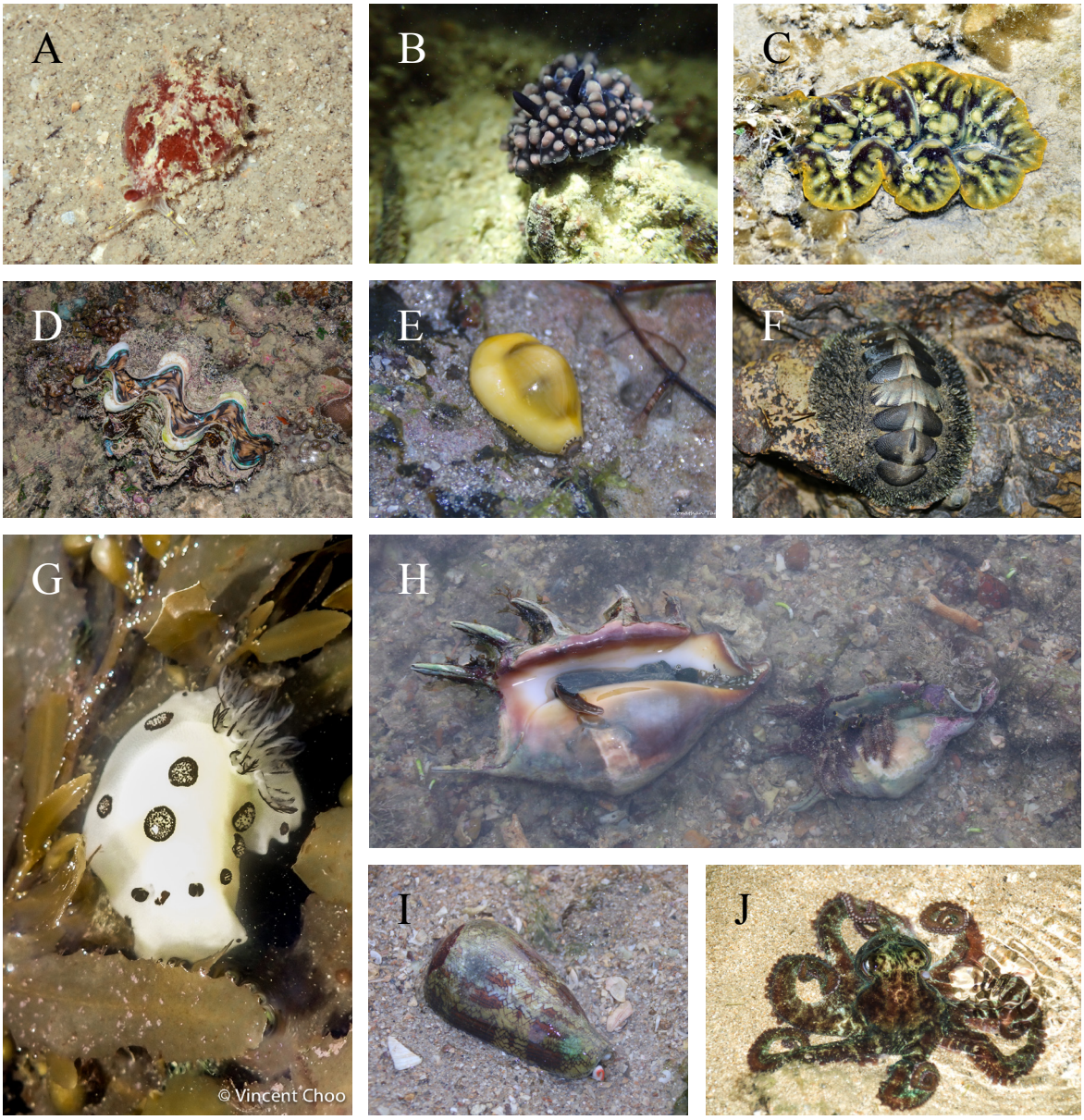
Sanpanich, K. & Tan, S.K. (2016). Shell-bearing gastropod molluscs of the Singapore Strait. *Raffles Bulletin of Zoology*, Suppl. 34: 528–538.

Tan, S.K. & Tan, K.S. (2024a). Checklist of Mollusca species with their category of threat status for Singapore. In: Davison, G.W.H., Gan, J.W.M., Huang, D., Hwang, W.S., Lum, S.K.Y. & Yeo, D.C.M. (eds.), *The Singapore Red Data Book.: Red Lists of Singapore Biodiversity*, 3rd edition. National Parks Board, Singapore.

Tan, S.K. & Tan, K.S. (2024b). Mollusca – Molluscs. In: Davison, G.W.H., Gan, J.W.M., Huang, D., Hwang, W.S., Lum, S.K.Y. & Yeo, D.C.M. (eds.), *The Singapore Red Data Book.: Red Lists of Singapore Biodiversity*, 3rd edition. National Parks Board, Singapore.

Tan, S.K. & Woo, H.P.M. (2010). *A Preliminary Checklist of the Molluscs of Singapore*. Raffles Museum of Biodiversity Research, National University of Singapore. Pp. 1–78.

Tan, Y.H.J., Leong, B.P.I., Davison, G.W.H. & Tun, K.P.P. (2025). Introduction to the Southern Islands Biodiversity Survey, Singapore, 2020–2022. In Davison, G.W.H., Leong, B.P.I., Tan, Y.H.J., Seng, R.Y.N. & Mark, R.Y.Y, *The Southern Islands Biodiversity Survey, Singapore.* National Parks Board Singapore. https://go.gov.sg/sibs-introduction



Appendix 1. (A) Bean Cowrie (Triviidae) at Pulau Berkas, credit: Toh Chay Hoon. **(B)** Black Phyllid Nudibranch (*Phyllidiella nigra*) at Pulau Satumu, credit: Dayna Cheah. **(C)** Boring Giant Clam (*Tridacna crocea*) at Pulau Berkas, credit: Loh Kok Sheng. **(D)** Dubious Nerite (*Clithon oualaniense*) at Sentosa, credit: Jonathan Tan. **(E)** Money Cowrie (*Monetaria moneta*), Cyrene Reef, credit: Jonathan Tan. **(F)** Jewelled chiton (*Acanthopleura gemmata*) at Lazarus Island, credit: Jonathan Tan. **(G)** Polka-dot Nudibranch (*Jorunna fenebris*) at Pulau Biola, credit: Vincent Choo. **(H)** Live Spider conch (*Lambis lambis;* left) and hermit crab in an empty shell (right) at Lazarus Island, credit: Jonathan Tan. **(I)** Textile Cone Snail (*Concus textile*) at Lazarus Island, credit: Jonathan Tan. **(J)** Reef Octopus (Octopodidae sp. "reef") at Kusu Island, credit: Jonathan Tan.

Appendix 2. Locations of bivalve species found in Southern Island intertidal waters from published, un-published literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. RDB3 = Singapore Red Data Book 3 Status, IUCN = International Union for Conservation of Nature Status, BIO = Pulau Biola, BRK = Pulau Berkas, CYR = Terumbu Pandan (Cyrene Reef), HNT = Pulau Hantu, JNG = Pulau Jong, KEP = Keppel Island, KUS = Pulau Tembakul (Kusu Island), LAZ = Pulau Sekijang Pelepah (Lazarus Island), RAL = Pulau Satumu (Raffles Lighthouse), SAL = Pulau Salu, SIS = Pulau Subar Darat dan Laut (Sisters' Islands), SJI = Pulau Sekijang Bendera (St John's Island), SMK = Pulau Semakau, SNT = Pulau Blakang Mati (Sentosa Island), TKR = Pulau Tekukor, TPS = Terumbu Pempangs. Acronyms for RDB3/IUCN: EX = Globally Extinct, NEx = Presumed Nationally Extinct, CR = Critically Endangered, EN = Endangered, VU = Vulnerable, NT = Near Threatened, LC = Least Concern, DD = Data Deficient, NE = Not Evaluated, NA = Not Assessed.

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Anomiidae	*Enigmonia aenigmatica*	NT	NL												2020	2012			
Arcidae	*Anadara antiquata*	NA	NE													2013			
Arcidae	*Arca avellana*	NA	NE													2012	2020		
Arcidae	*Arca navicularis*	DD	NL				2016												
Arcidae	*Arca plicata*	NA	NE													2012			
Arcidae	*Arca volucris*	NA	NE					SBR											
Arcidae	*Barbatia amygdalumtostum*	LC	NL					2013				2013		2019	2013	2012	2020		2013
Arcidae	*Barbatia decussata*	NA	NE					n.d.						2019					
Arcidae	*Barbatia foliata*	NA	NE	2013															
Arcidae	*Barbatia trapezina*	NA	NE														2020		
Cardiidae	*Corculum cardissa*	NT	NL				SIBS									2020			2020
Cardiidae	*Fragum unedo*	NT	NL			2020	SIBS				2020					2020			2020
Cardiidae	*Fulvia laevigata*	NA	NE													2012			
Cardiidae	*Hippopus hippopus*	NEx	EN													2012			
Cardiidae	*Scutarcopagia linguafelis*	NA	NE													2012			
Cardiidae	*Tridacna crocea*	EN	LC	SIBS	SIBS		2020				2020	SIBS; 2020	SIBS	2019		SIBS; 2020	2020		2020
Cardiidae	*Tridacna maxima*	CR	CD											2018					

SBR = Singapore Biodiversity Record, n.d. = no date

Appendix 2 continued. Locations of bivalve species found in Southern Island intertidal waters from published, un-published literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation.

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Cardiidae	*Tridacna squamosa*	CR	CD	SIBS	SIBS	SIBS; 2020	2020	SIBS; 2020		SIBS; 2020	2020	SIBS; 2020	SIBS	2020	2017	2020	SIBS; 2020	2020	2020
Cardiidae	*Vasticardium flavum*	LC	NL				2013									2012			
Cardiidae	*Vasticardium pectiniforme*	LC	NL											2013		2013			2013
Cardidae	Family Cardiidae sp "large"	-	-	SIBS		2020					2020			2020	2020	2020	2020		
Carditidae	*Beguina semiorbiculata*	NA	NE											2019					
Carditidae	*Cardita variegata*	LC	NL					2013				2013		2019	2013	2012			
Chamidae	*Chama asperella*	NA	NE													2012			
Chamidae	*Chama brassica*	NA	NE													2012	2020		
Chamidae	*Chama lazarus*	NA	NE												2013				
Chamidae	*Chama pacifica*	NA	NE													2012			
Corbulidae	*Corbula ovalina*	NA	NE													2012			
Crassatellidae	*Bathytormus radiatus*	LC	NL	2013															
Cyrenidae	*Geloina expansa*	NA	NE													2012			
Dreissenidae	*Mytilopsis sallei*	NA	NE													2013			
Galeommatidae	*Lepirodes ambiguus*	NA	NE													2012			
Galeommatidae	*Pseudogaleomma japonica*	NA	NE													2012			
Galeommatidae	*Scintilla cuvieri*	NA	NE													2012			
Galeommatidae	*Scintilla rosea*	NA	NE													2012			

Appendix 2 continued. Locations of bivalve species found in Southern Island intertidal waters from published, un-published literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation.

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Galeommatidae	*Scintillula ovulina*	NA	NE													2012			
Gryphaeidae	*Hyotissa hyotis*	NA	NE												2013				
Isognomonidae	*Isognomon isognomum*	LC	NL				2020				2020			2020		2020	2020	2020	2020
Isognomonidae	*Isognomon ephippium*	LC	NL													2012			
Isognomonidae	*Isognomon legumen*	NA	NE				2016		2015							2010	2020		
Lasaeidae	*Curvemysella paula*	NA	NE											2019	2019				
Limidae	*Lima lima*	NA	NE												2019				
Limidae	*Lima vulgaris*	LC	NL					SIBS; 2013						2020		2020	2018		2013
Limidae	*Limaria basilanica*	NA	NE													2012			
Limidae	*Limaria fragilis*	LC	NL											2019	2013				
Lucinidae	*Austriella corrugata*	LC	NL													2013			
Lucinidae	*Euanodontia ovum*	NA	NE													2012			
Lucinidae	*Pegophysema philippiana*	NA	NE													2012			
Mactridae	*Lutraria rhynchaena*	NA	NE													2012			
Mactridae	*Mactra grandis*	LC	NL								2020			2020	2020	2012			
Mactridae	*Mactra maculata*	NA	NE														SBR		
Malleidae	*Malleus albus*	LC	NL													2013			
Malleidae	*Malleus malleus*	DD	NL													2013			
Malleidae	*Malleus regula*	LC	NL									2013		2019	2013	2013			

SBR = Singapore Biodiversity Record

Appendix 2 continued. Locations of bivalve species found in Southern Island intertidal waters from published, un-published literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation.

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Margaritidae	*Pinctada albina*	NA	NE													2010			
Margaritidae	*Pinctada fucata*	NA	NE													2012			
Margaritidae	*Pinctada sugillata*	NA	NE													2012			
Mesodesmatidae	*Atactodea striata*	LC	NL												2013	2012		2013	
Mesodesmatidae	*Davila plana*	NA	NE															2013	
Mytilidae	*Arcuatula senhousia*	DD	NL													2012			
Mytilidae	*Leiosolenus malaccanus*	NA	NE													2012			
Mytilidae	*Leiosolenus nasutus*	NA	NE				2013												
Mytilidae	*Modiolus modulaides*	DD	NL				2013									2012			
Mytilidae	*Modiolus philippinarum*	NA	NE													2010			
Mytilidae	*Perna viridis*	DD	NL						2020							SIBS; 2012	2015		
Mytilidae	*Septifer excisus*	NA	NE														2020		
Mytilidae	*Lithophaga malaccana*	NA	NE													2013			2013
Mytilidae	*Lithophaga teres*	NA	NE													2012			2013
Mytilidae	*Septifer bilocularis*	LC	NL					2013							2013	2012	2020		
Noetiidae	*Striarca symmetrica*	LC	NL													2012	2020		
Ostreidae	*Dendostrea folium*	NA	NE													2012			
Ostreidae	*Dendostrea frons*	NA	NE											2019				2019	
Ostreidae	*Dendostrea sandvichensis*	NA	NE													2012			

Appendix 2 continued. Locations of bivalve species found in Southern Island intertidal waters from published, un-published literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation.

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Ostreidae	*Magallana ariakensis*	NA	NE											2019	2019				
Ostreidae	*Planostrea pestigris*	NA	LC												2013	2012			
Ostreidae	*Saccostrea cucullata*	LC	NL													2012	2020		
Ostreidae	*Saccostrea cucullata*	NA	NE				2013												
Ostreidae	Family Ostreidae sp "plain rock"	-	-	SIBS;			SIBS; 2020		2020	2020					SIBS	2020	SIBS	2020	
Ostreidae	Family Ostreidae sp "zig zag"	-	-				SIBS	SIBS		2020	2020	2020	SIBS	2020	SIBS; 2020				
Pectinidae	*Coralichlamys madreporarum*	NT	NL									2013				SIBS			
Pectinidae	*Decatopecten radula*	LC	NL					2013						2013		2013			
Pectinidae	*Decatopecten radula radula*	NA	NE												2013				
Pectinidae	*Excellichlamys histrionica*	NA	NE	2013															
Pectinidae	*Pedum spondyloideum*	DD	NL				2020				2020	SIBS; 2020		2020	2020	SIBS; 2020	2020		2020
Pectinidae	*Semipallium flavicans*	NA	NE													SBR			
Pectinidae	*Volachlamys singaporina*	LC	NL									SIBS							
Pectinidae	Family Pectinidae sp "large"	-	-		2020	2020			2020							2020	2020		2020
Pilcatulidae	*Plicatula australis*	NA	NE													2012	2020		

SBR = Singapore Biodiversity Record

Appendix 2 continued. Locations of bivalve species found in Southern Island intertidal waters from published, un-published literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation.

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Pilcatulidae	*Plicatula plicata*	NA	NE													2012			
Pinnidae	*Atrina vexillum*	NT	NL			2013	2013							2019		2013		2013	2013
Pinnidae	*Pinna atropurpurea*	NT	NL											2019					
Pinnidae	*Pinna bicolor*	VU	NE											2013		2013		2013	
Placunidae	*Placuna ephippium*	NA	NE											2013		2012			
Placunidae	*Placuna placenta*	NA	NE													2012			
Pteriidae	*Pterelectroma physoides*	NA	NE											2019	2019				
Pteriidae	*Pteria gregata*	NA	NE											2019				2019	
Pteriidae	*Pteria penguin*	NA	NE							2013					2013				
Semelidae	*Semele carnicolor*	LC	NL													2012			
Spondylidae	*Spondylus nicobaricus*	NA	NE													2012			
Spondylidae	*Spondylus versicolor*	NA	NE													2012			
Tellinidae	*Cyclotellina remies*	NA	NE													2012	2020		
Tellinidae	*Macalia bruguieri*	LC	NL													2013	2020		
Tellinidae	*Quidnipagus palatum*	NA	NE													SBR			
Tellinidae	*Tellinella cruciata*	NA	NE													2012	2020		
Tellinidae	*Tellinella virgata*	LC	NL													2012	2020		
Tellinidae	*Tellinides timorensis*	NA	NE													SBR			
Trapezidae	*Coralliophaga coralliophaga*	NA	NE				2013									2012			

SBR = Singapore Biodiversity Record

Appendix 2 continued. Locations of bivalve species found in Southern Island intertidal waters from published, un-published literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation.

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Trapezidae	*Neotrapeziumm sublaevigatum*	NA	NE														2020		
Unionidae	*Fusconaia flava*	NA	NE											2019					
Veneridae	*Anomalodiscus squamosus*	LC	NL												2013	2012			
Veneridae	*Antigona chemnitzii*	NA	NE				SBR												
Veneridae	*Circe scripta*	NA	NE				SIBS; 2020	SIBS		2020				2020	2020	2020			
Veneridae	*Circe tumefacta*	NA	NE													2012			
Veneridae	*Dosinia amphidesmoides*	NA	NE													2012			
Veneridae	*Gafrarium dispar*	NA	NE														2020		
Veneridae	*Gafrarium divaricatum*	LC	NL			2020	SIBS										2020		
Veneridae	*Gafrarium pectinatum*	LC	NL				2013								2013	2013	SIBS		
Veneridae	Gafrarium sp “ribbed”	-	-				SIBS; 2020			2020	2020			2020	2020	2020	2020		
Veneridae	*Globivenus embrithes*	NA	NE	2013															
Veneridae	*Globivenus toreuma*	NA	NE											2018			2020		
Veneridae	*Lioconcha ornata*	NA	NE													2007			
Veneridae	*Marcia japonica*	LC	NL				2013												
Veneridae	*Meretrix meretrix*	NA	NE				2013												
Veneridae	*Neotrapezium sublaevigatum*	LC	NL													2012			

SBR = Singapore Biodiversity Record

Appendix 2 continued. Locations of bivalve species found in Southern Island intertidal waters from published, un-published literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation.

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Veneridae	Family Veneridae sp "white"	-	-				2020			2020	2020								
Veneridae	*Periglypta puerpera*	NA	NE													2012			
Veneridae	*Pitar citrinus*	NA	NE													2012			
Veneridae	*Placamen chloroticum*	NA	NE													2012			
Veneridae	*Tapes literatus*	LC	NL												2013	2012			
Veneridae	*Venerupis aspera*	NA	NE													2012	2020		
Veneroidea	*Hyphantosoma intricatum*	NA	NE					SBR											
Vulsellidae	*Electroma alacorvi*	NA	NE				2013												
Vulsellidae	*Vulsella vulsella*	NA	NE													2012			

Appendix 3. Locations of cephalopod species found in Southern Island intertidal waters from published, un-published literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. RDB3 = Singapore Red Data Book 3 Status, IUCN = International Union for Conservation of Nature Status, BIO = Pulau Biola, BRK = Pulau Berkas, CYR = Terumbu Pandan (Cyrene Reef), HNT = Pulau Hantu, JNG = Pulau Jong, KUS = Pulau Tembakul (Kusu Island), LAZ = Pulau Sekijang Pelepah (Lazarus Island), SIS = Pulau Subar Darat dan Laut (Sisters' Islands), SJI = Pulau Sekijang Bendera (St John's Island), SMK = Pulau Semakau, SNT = Pulau Blakang Mati (Sentosa Island), TPS = Terumbu Pempangs. Acronyms for RDB3/IUCN: EX = Globally Extinct, NEx = Presumed Nationally Extinct, CR = Critically Endangered, EN = Endangered, VU = Vulnerable, NT = Near Threatened, LC = Least Concern, DD = Data Deficient, NE = Not Evaluated, NA = Not Assessed.

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Argonautidae	*Argonauta hians*	NL	LC												SBR			
Idiosepiidae	*Idiosepius pygmaeus*	NL	DD				2013						2019	2019	2013			
Loliginidae	*Sepioteuthis lessoniana*	LC	NL		SIBS	2020	2020	SIBS		2020			2020	2020	2020	2020		2020
Loliginidae	*Uroteuthis duvaucelii*	NL	DD				2020		2013						2020			
Nautilidae	*Nautilus pompilius*	NL	NE												2012			
Octopodidae	*Octopus oliveri*	NL	NE										2019					
Octopodidae	*Octopus vitiensis*	NL	DD										2019	2019				
Octopodidae	*Octopus vulgaris*	NL	LC										2019					
Octopodidae	*Thaumoctopus mimicus*	NL	LC				SBR											
Octopodidae	Family Octopodidae sp "big-head seagrass"	-	-													2020		
Octopodidae	Family Octopodidae sp "reef"	-	-	SIBS		SIBS; 2020	SIBS; 2020	SIBS; 2020	SIBS; 2020	2020	SIBS; 2020	SIBS	SIBS; 2020	2020	SIBS; 2020	2020	2020	2020
Octopodidae	Family Octopodidae sp "slender seagrass"	-	-	SIBS	SIBS	SIBS							SIBS			SIBS; 2018	SIBS	
Sepiidae	*Sepia brevimana*	NL	DD													2015		
Sepiidae	*Sepia latimanus*	NL	DD			2020	2020		2020					2013	2020	2020		
Sepiidae	*Sepia papuensis*	NL	LC	2013			2013		2013						2012			

SBR = Singapore Biodiversity Record

Appendix 3. Continuation.

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Sepiidae	*Sepia recurvirostra*	NL	DD			2020			2013									
Sepiidae	*Sepiella inermis*	LC	NL						2013									2020
Sepiidae	Family Sepiidae sp "smooth"	-	-				2020											2020

SBR = Singapore Biodiversity Record

Appendix 4. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. RDB3 = Singapore Red Data Book 3 Status, IUCN = International Union for Conservation of Nature Status, BIO = Pulau Biola, BRK = Pulau Berkas, CYR = Terumbu Pandan (Cyrene Reef), HNT = Pulau Hantu, JNG = Pulau Jong, KEP = Keppel Island, KUS = Pulau Tembakul (Kusu Island), LAZ = Pulau Sekijang Pelepah (Lazarus Island), RAL = Pulau Satumu (Raffles Lighthouse), SAL = Pulau Salu, SIS = Pulau Subar Darat dan Laut (Sisters' Islands), SJI = Pulau Sekijang Bendera (St John's Island), SMK = Pulau Semakau, SNT = Pulau Blakang Mati (Sentosa Island), TKR = Pulau Tekukor, TPS = Terumbu Pempangs. Acronyms for RDB3/IUCN: EX = Globally Extinct, NEx = Presumed Nationally Extinct, CR = Critically Endangered, EN = Endangered, VU = Vulnerable, NT = Near Threatened, LC = Least Concern, DD = Data Deficient, NE = Not Evaluated, NA = Not Assessed.

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Aegiridae	*Aegires villosus*	NA	NE				SBR												
Aegiridae	*Notodoris gardineri*	NA	NE											2019					
Aeolidioidea	*Bulbaeolidia alba*	NA	NE				SBR												
Aglajidae	*Chelidonura pallida*	NA	NE													2012			
Aglajidae	*Odontoglaja guamensis*	NA	NE	SBR															
Aglajidae	*Odontoglaja mosaica*	NA	NE				SBR												
Aglajidae	*Tubulophilinopsis lineolata*	NA	NE			2020													
Aglajidae	*Tubulophilinopsis pilsbryi*	NA	NE			2020								2019	2019	2020			
Aglajidae	*Tubulophilinopsis reticulata*	NA	NE			2020													
Aglajidae	*Chelidonura amoena*	NA	NE				SBR												
Amathinidae	*Amathina tricarinata*	NA	NE													2013		2013	
Angariidae	*Angaria delphinus*	LC	NL			2016	2013	2013		2013	2020	2020		2020		2012	2020		
Angariidae	*Angaria sphaerula*	NA	NE								2016								
Aplysiidae	*Aplysia dactylomela*	NA	NE			2020		SIBS; 2020			2020					2020	2020		

SBR = Singapore Biodiversity Record

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Aplysiidae	*Aplysia extraordinaria*	NA	NE			2020		2020		2020					2020	2020			2020
Aplysiidae	*Aplysia oculifera*	NA	NE			2020	SIBS; 2020			2020	2020				SIBS	2020			
Aplysiidae	*Aplysia parvula*	NA	NE				2020							2020					
Aplysiidae	*Bursatella leachii*	NA	NE			2020					2020				2020	2012		2020	
Aplysiidae	*Notarchus indicus*	NA	NE				SBR												
Aplysiidae	*Stylocheilus striatus*	NA	NE													2012			
Aplysiidae	*Syphonota geographica*	NA	NE			2020											2020		
Architectonicidae	*Architectonica perdix*	NA	NE				2013												2020
Architectonicidae	*Architectonica perspectiva*	DD	NL			2020	2020			2020	2020			2020	2020				
Architectonicidae	*Heliacus variegatus*	NA	NE					2020							2020				
Arminidae	*Dermatobranchus caeruleomaculatus*	NA	NE				SBR												
Arminidae	*Dermatobranchus fortunatus*	NA	NE											SBR					
Arminidae	*Dermatobranchus* sp “1”	NA	NE																2013
Arminidae	*Dermatobranchus* sp “2”	NA	NE								2013								
Arminidae	*Dermatobranchus* sp “3”	NA	NE									2013							

SBR = Singapore Biodiversity Record

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Arminidae	Dermatobranchus striatus	NA	NE					2018											
Assimineidae	*Optediceros breviculum*	NA	NE													2013			
Assimineidae	*Pseudomphala miyazakii*	NA	LC											2019	2019				
Batillariidae	*Batillaria zonalis*	NA	NE				SIBS; 2020			SIBS; 2020	SIBS; 2020			SIBS; 2020	SIBS; 2020	SIBS; 2020			
Bornellidae	*Bornella anguilla*	NA	NE				2013	2013						2018		2012			
Bornellidae	*Bornella hermanni*	NA	NE											2019					
Bornellidae	*Bornella stellifera*	NA	NE			2020	SIBS; 2020	2020		2020		2020		2020	2020	2020		2020	2020
Buccinidae	*Engina armillata*	LC	NL					2016		2016	2016					2012			
Buccinidae	*Pollia fumosa*	LC	NL			2016		2016		2016	2016	2016		2016	2016	2016	2020	2016	2016
Calliostomatidae	*Calliostoma scobinatum*	NA	NE													2012			
Calyptraeidae	*Ergaea walshi*	LC	NL													2012			
Calyptraeidae	*Siphopatella walshi*	NA	NE											2020					
Cassidae	*Phalium glaucum*	NT	NL			2016		2020		2020	2020			2016		SBR			
Cassidae	*Semicassis bisulcata*	NA	NE					2020											
Cerithiidae	*Cerithium coralium*	LC	LC				2016	2016			SIBS; 2013				2016	2016	SIBS	2016	
Cerithiidae	*Cerithium dialeucum*	NA	NE					n.d.								2012			

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Cerithiidae	*Cerithium ophioderma*	NA	NE				2013												
Cerithiidae	*Cerithium tenellum*	NA	NE			2016		n.d.											
Cerithiidae	*Cerithium torresi*	NA	NE	2007			2013									2013			
Cerithiidae	*Cerithium traillii*	NT	NL				2016	2016				2016				2016	2020		
Cerithiidae	*Cerithium zonatum*	LC	NL				2016	2016				2016		2013		2012			2013
Cerithiidae	*Clypeomorus batillariaeformis*	NA	NE				2016				2013					2012	2020		
Cerithiidae	*Clypeomorus bifasciata*	NA	NE	2013			2016	n.d.			2013	2016				2012			
Cerithiidae	*Clypeomorus concisus*	NA	NE					n.d.											
Cerithiidae	*Clypeomorus irrorata*	NA	NE				2013					2016							
Cerithiidae	*Clypeomorus pellucida*	NA	NE												2016	2020			
Cerithiidae	*Clypeomorus petrosa chemnitziana*	NT	NL				2013												
Cerithiidae	*Rhinoclavis articulata*	NA	NE			2016													
Cerithiidae	*Rhinoclavis aspera*	EN	NL			2016										2016			
Cerithiidae	*Rhinoclavis sinensis*	LC	NL	2007	SIBS	SIBS; 2020	2020	SIBS; 2020			2020	SIBS; 2016	SIBS	2020	SIBS; 2020	2012	SIBS; 2020	SIBS	
Cerithiidae	*Rhinoclavis sordidula*	NA	NE				2016				2013					2016			

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Cerithiidae	*Rhinoclavis vertagus*	EN	NL													2012			
Cerithiidae	Family Cerithiidae sp "plain"	-	-		SIBS	SIBS; 2020	SIBS; 2020	2020			2020					2020	2020	SIBS	
Cerithiidae	Family Cerithiidae sp "variegated"	-	-			SIBS	SIBS; 2020							2020		2020	SIBS; 2020	SIBS	
Chilodontaidae	*Euchelus asper*	NA	NE													2012		2016	
Calyptraeidae	*Ergaea walshi*	LC	NL													2012			
Calyptraeidae	*Siphopatella walshi*	NA	NE											2020					
Cassidae	*Phalium glaucum*	NT	NL			2016		2020		2020	2020			2016		SBR			
Cassidae	*Semicassis bisulcata*	NA	NE					2020											
Cerithiidae	*Cerithium coralium*	LC	LC				2016	2016			SIBS; 2013				2016	2016	SIBS	2016	
Cerithiidae	*Cerithium dialeucum*	NA	NE					n.d.								2012			
Cerithiidae	*Cerithium ophioderma*	NA	NE				2013												
Cerithiidae	*Cerithium tenellum*	NA	NE			2016		n.d.											
Cerithiidae	*Cerithium torresi*	NA	NE	2007			2013									2013			
Cerithiidae	*Cerithium traillii*	NT	NL				2016	2016				2016				2016	2020		
Cerithiidae	*Cerithium zonatum*	LC	NL				2016	2016				2016		2013		2012			2013
Cerithiidae	*Clypeomorus batillariaeformis*	NA	NE				2016				2013					2012	2020		
Cerithiidae	*Clypeomorus bifasciata*	NA	NE	2013			2016	n.d.			2013	2016				2012			

SBR = Singapore Biodiversity Record

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Cerithiidae	*Clypeomorus concisus*	NA	NE					n.d.											
Cerithiidae	*Clypeomorus irrorata*	NA	NE				2013					2016							
Cerithiidae	*Clypeomorus pellucida*	NA	NE												2016	2020			
Cerithiidae	*Clypeomorus petrosa chemnitziana*	NT	NL				2013												
Cerithiidae	*Rhinoclavis articulata*	NA	NE			2016													
Cerithiidae	*Rhinoclavis aspera*	EN	NL			2016										2016			
Cerithiidae	*Rhinoclavis sinensis*	LC	NL	2007	SIBS	SIBS; 2020	2020	SIBS; 2020			2020	SIBS; 2016	SIBS	2020	SIBS; 2020	2012	SIBS; 2020	SIBS	
Cerithiidae	*Rhinoclavis sordidula*	NA	NE				2016				2013					2016			
Cerithiidae	*Rhinoclavis vertagus*	EN	NL													2012			
Chilodontaidae	*Euchelus asper*	NA	NE													2012		2016	
Chilodontaidae	*Euchelus atratus*	LC	NL			2016	2016	2016		2016		2016			SIBS; 2016	2012		SIBS; 2016	2016
Chilodontaidae	*Herpetopoma pauperculum*	NA	NE											2019					
Chilodontaidae	*Hybochelus cancellatus*	NA	NE												2016				
Chromodorididae	*Ceratosoma gracillimum*	NA	NE			2020	2020	2018	2020		2013			2019	2020	2020	2020		

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Chromodorididae	*Ceratosoma tenue*	NA	NE	2013															
Chromodorididae	*Ceratosoma trilobatum*	NA	NE													2012			
Chromodorididae	*Chromodoris lineolata*	NA	NE			2020	2020		2020	2020			SIBS	2020		2020	2020		2020
Chromodorididae	*Chromodoris mandapamensis*	NA	NE				2018											SBR	
Chromodorididae	*Chromodoris striatella*	NA	NE				2018			2013									
Chromodorididae	*Doriprismatica atromarginata*	NA	NE		SIBS	SIBS; 2020	2020	2020	2020		2020	2020	SIBS	2020	2020	2020	2020	2013	2020
Chromodorididae	*Felimare villafranca*	NA	NE											2019				2019	
Chromodorididae	*Glossodoris cincta*	NA	NE													2013			
Chromodorididae	*Glossodoris rufomarginata*	NA	NE				2013	2013						2019	2019	2013			
Chromodorididae	*Goniobranchus aureopurpureus*	NA	NE											2018					
Chromodorididae	*Goniobranchus collingwoodi*	NA	NE				SBR												
Chromodorididae	*Goniobranchus fidelis*	NA	NE				2018	2013						2019		2020		2020	
Chromodorididae	*Goniobranchus sinensis*	NA	NE				2018				2018						2015		
Chromodorididae	*Goniobranchus trimarginatus*	NA	NE				SBR												

SBR = Singapore Biodiversity Record

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Chromodorididae	*Goniobranchus verrieri*	NA	NE								2018								
Chromodorididae	*Hypselodoris bullockii*	NA	NE				2018									2013			
Chromodorididae	*Hypselodoris emma*	NA	NE					2018	2020					2019					
Chromodorididae	*Hypselodoris infucata*	NA	NE												2013				
Chromodorididae	*Hypselodoris krakatoa*	NA	NE				2013											2013	
Chromodorididae	*Hypselodoris maculosa*	NA	NE													2012		2013	
Chromodorididae	*Hypselodoris maritima*	NA	NE													2020			
Chromodorididae	*Hypselodoris tryoni*	NA	NE											SBR					
Chromodorididae	*Miamira sinuata*	NA	NE			2020	2020							2020		2020			
Clathurellidae	*Etremopa gainesii*	NA	NE							2016									
Columbellidae	*Pardalinops testudinaria*	LC	NL			SIBS; 2020	2016	SIBS; 2016		SIBS; 2016	2020	2016		2019	SIBS; 2020	2020	SIBS; 2020	SIBS; 2016	
Columbellidae	*Euplica borealis*	NA	NE			2013	2016	2016			2016			2013					
Columbellidae	*Euplica scripta*	LC	NL		SIBS		2016	2020			2016	2016		2020	SIBS; 2020	2020	SIBS; 2020	2016	
Columbellidae	*Euplica varians*	NA	NE					n.d.											
Columbellidae	*Graphicomassa ligula*	NA	NE													2013			

SBR = Singapore Biodiversity Record

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Columbellidae	*Graphicomassa margarita*	NA	NE													2013			
Columbellidae	*Mitrella bicincta*	NA	NE									2013							
Columbellidae	*Mitrella essingtonensis*	NA	NE													SBR			
Columbellidae	*Mitrella moleculina*	NA	NE							2013	2013	2016		2013					
Columbellidae	*Morula musiva*	NA	NE	2007			2016	n.d.						2019	SIBS; 2019	2012			
Columbellidae	*Parametaria philippinarum*	NA	NE													2012			
Columbellidae	*Pictocolumbella ocellata*	LC	NL	SIBS; 2007		2020	2016	SIBS; 2020		2020	2020	2020	SIBS	2020	SIBS; 2020	2020	SIBS; 2020	SIBS; 2020	
Columbellidae	*Pseudanachis basedowi*	LC	NL													2012			
Columbellidae	*Pyrene flava*	NA	NE											2013					
Columbellidae	*Pyrene pudica*	NA	NE								2016								
Columbellidae	*Pyrene splendidula*	NA	NE					2016		2016				2016					
Conidae	*Conus achatinus*	DD	LC								SBR								
Conidae	*Conus granum*	NA	LC					2013											
Conidae	*Conus magus*	NA	NE				2013							2018					
Conidae	*Conus marmoreus*	NA	LC				SBR												
Conidae	*Conus mustelinus*	NA	NE											2019					
Conidae	*Conus recluzianus*	NA	LC								SBR								
Conidae	*Conus textile*	DD	LC								SIBS			2018					

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Conidae	*Leporiconus granum*	NA	NE					2016											
Costasiellidae	*Costasiella paweli*	NA	NE				2013									2012			
Costellariidae	*Costasiella kuroshimae*	NA	NE				2013							2019					
Costellariidae	*Costasiella usagi*	NA	NE				2013							2019					
Costellariidae	*Vexillum crocatum*	NA	NE					2016											
Costellariidae	*Vexillum intertaeniatum*	NA	NE												2016				
Costellariidae	*Vexillum ziervogelii*	NA	NE												2016				
Cyctiscidae	*Cystiscus minutissimus*	NA	NE				2018							2018					
Cypraeidae	*Bistolida ursellus*	NA	NE											2016					
Cypraeidae	*Contradusta walkeri*	NA	NE			2020		2020											
Cypraeidae	*Cribrarula cribraria*	NA	NE											2018					
Cypraeidae	*Cypraea tigris*	VU	NL													2020			
Cypraeidae	*Eclogavena quadrimaculata*	NT	NL				2020	2016				2013		2020		2020	2020		
Cypraeidae	*Erosaria miliaris*	NA	NE				SIBS			2020	SIBS; 2018				2013	2020	2020		
Cypraeidae	*Erronea caurica*	NA	NE				2016												
Cypraeidae	*Erronea caurica caurica*	NA	NE				2013												

SBR = Singapore Biodiversity Record

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Cypraeidae	*Erronea cylindrica*	NA	NE							2013					2013	SIBS; 2012			
Cypraeidae	*Erronea errones*	LC	NL	SIBS		SIBS; 2016	2016	2016		2020	2020	SIBS; 2016		2020	2016	2020	2020	SIBS; 2016	2016
Cypraeidae	*Erronea onyx*	LC	NL	SIBS						2020							2015		
Cypraeidae	*Erronea ovum*	LC	NL		SIBS	2020	2020	SIBS; 2020			2020	SIBS; 2020		2020	2020	SIBS; 2020	SIBS; 2020	2020	2020
Cypraeidae	*Lyncina vitellus*	NA	NE							2020									
Cypraeidae	*Mauritia arabica*	LC	NL				2020			SIBS; 2020	SIBS; 2020	SIBS; 2020		SIBS; 2020	2020	2012		2013	
Cypraeidae	*Monetaria moneta*	CR	NL			SIBS													
Cypraeidae	*Purpuradusta gracilis*	NA	NE			2016													
Cypraeidae	*Purpuradusta gracilis gracilis*	NA	NE			2013													
Cypraeidae	*Echinolittorina feejeensis*	NA	NE									2016							
Cypraeidae	*Echinolittorina malaccana*	LC	NL				2009				2020	2020		2020	2020	2020	2020		2016
Cypraeidae	*Echinolittorina vidua*	LC	NL				2009	n.d.				2016			2009	2012			
Dendrodorididae	*Dendrodoris albobrunnea*	NA	NE											2013				SIBS	
Dendrodorididae	*Dendrodoris denisoni*	NA	NE			2020	2020			2020				2020		2020			
Dendrodorididae	*Dendrodoris elongata*	NA	NE							2013									

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Dendrodorididae	*Dendrodoris fumata*	NA	NE	SIBS										2020	2020				
Dendrodorididae	*Dendrodoris guttata*	NA	NE				SBR												
Dendrodorididae	*Dendrodoris nigra*	NA	NE			2020								2019					
Dendrodorididae	*Dendrodoris tuberculosa*	NA	NE			2020	2020									2020			
Discodorididae	*Asteronotus cespitosus*	NA	NE													2012			
Discodorididae	*Atagema intecta*	NA	NE			2013	2020									2020	2020	2013	
Discodorididae	*Carminodoris nodulosa*	NA	NE			2020													
Discodorididae	*Discodoris boholiensis*	NA	NE			2020	2020	2020			2020	2013		2020	2020	2020	2020		2020
Discodorididae	*Jorunna funebris*	NA	NE	SIBS	SIBS	SIBS; 2020	SIBS; 2020	SIBS; 2020	2020			SIBS	SIBS	2020	SIBS; 2020	SIBS; 2020	2020	2020	2020
Discodorididae	*Platydoris scabra*	NA	NE			2013	2020			2020		2013			2020	2020		2020	
Discodorididae	*Tayuva lilacina*	NA	NE			2020	2020					SIBS		2020	2020	2020	2020		
Doridomorphidae	*Doridomorpha gardineri*	NA	NE							SBR			SIBS	2018	SBR				
Dotidae	*Doto greenamyeri*	NA	NE				SBR												
Dotidae	*Doto ussi*	NA	NE				SBR												
Drilliidae	*Clavus exasperatus*	NA	NE			2016													
Drilliidae	*Clavus pusilla*	NA	NE				2016												
Ellobiidae	*Cassidula aurisfelis*	NE	LC													2007			

SBR = Singapore Biodiversity Record

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Ellobiidae	*Cassidula nucleus*	NE	NE													2020			
Ellobiidae	*Cassidula* sp "mangrove"	NE	NE													2020			
Ellobiidae	*Ellobium aurismidae*	LC	LC													2012			
Ellobiidae	*Laemodonta punctatostriata*	NA	NE													2007			
Ellobiidae	*Laemodonta siamensis*	NA	NE													2007			
Ellobiidae	*Laemodonta typica*	NE	NE												2013	2007			
Ellobiidae	*Pythia trigona*	LC	NL													2012			
Eubranchidae	*Eubranchus mandapamensis*	NA	NE				2018												
Eubranchidae	*Eubranchus ocellatus*	NA	NE				SBR							2018					
Eubranchidae	*Eubranchus rubropunctatus*	NA	NE															SBR	
Eubranchidae	*Eurylepta sp "8"*	NA	NE				SBR												
Eulimidae	*Annulobalcis yamamotoi*	NA	NE											2016					
Eulimidae	*Thyca astericola*	NA	NE							2013									
Facelinidae	*Favorinus tsuruganus*	NA	NE				SBR												
Facelinidae	*Noumeaella rehderi*	NA	NE				SBR												
Facelinidae	*Phyllodesmium serratum*	NA	NE							2013									

SBR = Singapore Biodiversity Record

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Facelinidae	*Pteraeolidia ianthina*	NA	NE			2020	2020	2013	2020	2020	2013		SIBS	2020	2020	2020	SIBS; 2015	2019	
Facelinidae	*Pteraeolidia semperi*	NA	NE				2018	2018			2018			2018					2018
Facelinidae	*Sakuraeolis kirembosa*	NA	NE				SBR												
Facelinidae	*Sakuraeolis nungunoides*	NA	NE				2018												
Fasciolariidae	*Latirolagena smaragdulus*	NA	NE												2016				
Ficidae	*Ficus variegata*	NA	NE			2020													
Fionidae	*Tergiposacca longicerata*	NA	NE				SBR												
Fissurellidae	*Diodora mus*	NA	NE	2016											2013	2016			
Fissurellidae	*Diodora singaporensis*	LC	NL									2016				2012		2016	
Fissurellidae	*Emarginella incisura*	NA	NE									SBR							
Fissurellidae	*Montfortista oldhamiana*	NA	NE						SBR										
Fissurellidae	*Scutus unguis*	LC	NL													2012	2015		
Flabellinidae	*Coryphellina rubrolineata*	NA	NE											2019					
Flabellinidae	*Flabellina rubrolineata*	NA	NE					2013											
Gastropteridae	*Sagaminopteron nigropunctatum*	NA	NE				SBR												

SBR = Singapore Biodiversity Record

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Goniodorididae	*Trapania caerulea*	NA	NE				SBR												
Goniodorididae	*Trapania euryeia*	NA	NE				SBR												
Goniodorididae	*Trapania gibbera*	NA	NE				SBR												
Goniodorididae	*Trapania vitta*	NA	NE				SBR												
Gymnodorididae	*Gymnodoris inornata*	NA	NE	SIBS														2013	
Gymnodorididae	Gymnodoris sp “yellow-spotted”	-	-			2020	2020	2020						2020		2020			2020
Haliotidae	*Haliotis asinine*	EN	NE												2013				
Haliotidae	*Haliotis ovina*	NA	NE								2016								
Haliotidae	*Haliotis ovina ovina*	NA	NE								2013								
Haliotidae	*Haliotis planata*	EN	NE									2016							
Haminoeidae	*Atys naucum*	NA	NE				SBR												
Haminoeidae	*Haminoea tenera*	NA	NE													2012			
Haminoeidae	*Vellicolla okamotoi*	NA	NE				SBR												
Hermaeidae	*Polybranchia orientalis*	NA	NE			2020									2020				
Juliidae	*Berthelinia singaporensis*	NA	NE			2020	2020				SBR						2020		
Limapontiidae	*Placida cremoniana*	NA	NE				SBR												
Limapontiidae	*Placida daguilarensis*	NA	NE				2009	2013					SIBS						
Limapontiidae	*Sacoproteus smaragdinus*	NA	NE			2020					2020				2020		SIBS; 2020		

SBR = Singapore Biodiversity Record

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Littorinidae	*Echinolittorina melanacme*	LC	NL												2009	2012			
Littorinidae	*Echinolittorina pascua*	NA	NE					n.d.							SIBS				
Littorinidae	*Echinolittorina* sp “round”	NA	NE					2020							2020	2020	2020		
Littorinidae	*Littoraria articulata*	NA	NE					2016				2016		2019	2019	2012			
Littorinidae	*Littoraria carinifera*	LC	NL													2012			
Littorinidae	*Littoraria conica*	LC	NL													2007			
Littorinidae	*Littoraria intermedia*	NA	NE												2016	2012			
Littorinidae	*Littoraria lutea*	NA	NE													2007			
Littorinidae	*Littoraria melanostoma*	LC	NL												2016	2020			
Littorinidae	*Littoraria pallescens*	NA	NE												2016	2012			
Littorinidae	*Littoraria strigata*	NA	NE												2016				
Littorinidae	*Littoraria vespacea*	LC	NL													2012			
Littorinidae	Littoraria sp “mangrove”	-	-				2020									2020			
Littorinidae	Family Littorinidae sp “rock”	-	-				2020				2020			2020	2020	2020	2018		
Lottiidae	*Patelloida pygmaea*	NA	NE													2012			2013

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Lottiidae	*Patelloida saccharina*	NA	NE				2009								2009				
Lottiidae	*Patelloida saccharinoides*	NA	NE	SIBS			SIBS; 2020			2020	2020	2016		2020	SIBS; 2020	2020	SIBS	2020	
Marginellidae	*Cryptospira fischeri*	NA	NE	2016															
Marginellidae	*Cryptospira tricincta*	NA	NE				2016							2013					
Melongenidae	*Pugilina cochlidium*	NA	NE			SIBS; 2020	SIBS; 2020			2020				2020		2020	SIBS; 2020		2020
Mitridae	*Calcimitra subflava*	NA	NE													2013			
Mitridae	*Mitra puncticulata*	NA	NE					2016											
Mitridae	*Mitra tabanula*	NA	NE												2016	2016			
Mitridae	*Pseudonebularia proscissa*	NA	NE													2012			
Mitridae	*Pterygia dactylus*	NA	NE													2012			
Mitridae	*Pterygia undulosa*	NA	NE													2016			
Modulidae	*Indomodulus tectum*	NA	NE									SBR							
Muricidae	*Chicoreus brunneus*	LC	NL	SIBS			2016	2016		2016		2016		2019	2019	2016		SIBS; 2016	
Muricidae	*Chicoreus capucinus*	LC	NL												SIBS	2020			
Muricidae	*Chicoreus microphyllus*	NA	NE									2013							
Muricidae	*Chicoreus ramosus*	NT	NL		SIBS	2020	SBR				2013			2018					

SBR = Singapore Biodiversity Record

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Muricidae	*Chicoreus torrefactus*	NT	NL				2016	2016		2016		2013		2016	2013	2012	2020		
Muricidae	Chicoreus sp "reef"	-	-			SIBS; 2020	2020	SIBS	SIBS; 2020		2020	2020		2020	2020	2020		2020	2020
Muricidae	*Drupella margariticola*	LC	NL			2016	2016	2016				2016		2019	2016	2016	2020	2019	2013
Muricidae	*Drupella rugosa*	NT	NL			2016	2016							2013	2016	2016		2016	
Muricidae	*Ergalatax contracta*	LC	NL	2016			2016				2016			2019	2019	2016			
Muricidae	*Indothais lacera*	NA	NE												SIBS				
Muricidae	*Indothais rufotincta*	LC	NL					n.d.											
Muricidae	*Indothais sacellum*	NA	NE							2016					2016	2016			
Muricidae	*Mancinella echinata*	LC	NL	2013		2016	2016	2016		2016		2016		2019	2019	2016		2019	2016
Muricidae	*Morula echinata*	NA	NE					n.d.											
Muricidae	*Morula fusca*	NA	NE	2007		SIBS	2009	n.d.							2009	2012			
Muricidae	*Morula iostoma*	NA	NE				2016												
Muricidae	*Morula spinosa*	NA	NE					2016		2016		2016				2012			
Muricidae	*Murex trapa*	LC	NL													2012			
Muricidae	*Muricodrupa fiscella*	NA	NE									2013		2013	2013				
Muricidae	*Neothais marginatra*	NA	NE													2013			
Muricidae	*Orania bimucronata*	NA	NE												2009	2013			

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Muricidae	*Reishia bitubercularis*	LC	NL					2016						2019	2016		2020	SIBS; 2016	
Muricidae	*Reishia clavigera*	LC	NL											2019					
Muricidae	*Semiricinula fusca*	NA	NE		SIBS	SIBS		SIBS; 2020		2020	2020		SIBS	2020	2020				
Muricidae	*Semiricinula muricoides*	NA	NE													2012			
Muricidae	*Tenguella granulata*	NA	NE										SBR						
Muricidae	*Tenguella musiva*	LC	NL					2016				2016		2019	2016			2016	
Muricidae	*Thais bitubercularis*	NA	NE					2013							2013	2012		2013	
Muricidae	Thais sp “chunky”	-	-			SIBS		2020				2020	SIBS	2020	SIBS; 2020		SIBS; 2020	2020	
Muricidae	Thais sp “elegant”	-	-				SIBS								2020				
Myrrhinidae	*Phyllodesmium briareum*	NA	NE					2018								2012	2020		
Nacellidae	*Cellana radiata*	NA	NE				2016	n.d.							2016				
Nacellidae	Cellana sp “smooth”	-	-									SIBS							
Nassariidae	*Nassaria acuminata*	LC	NL	2016												2016			
Nassariidae	*Nassaria bitubercularis*	NA	NE													2013			
Nassariidae	*Nassarius acuticostus*	NA	NE										SBR						

SBR = Singapore Biodiversity Record

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Nassariidae	*Nassarius castus*	NA	NE			2016	2016	2016				2016		2016	2013	2016			
Nassariidae	*Nassarius concinnus*	NA	NE	2016				2016											
Nassariidae	*Nassarius crenoliratus*	NA	NE			2016	2016				SIBS	2016			2016	2016			
Nassariidae	*Nassarius echinatus*	NA	NE				SIBS			SIBS; 2020				2020	2020				
Nassariidae	*Nassarius fuscolineatus*	NA	NE								2016								
Nassariidae	*Nassarius fuscus*	NA	NE													2012			
Nassariidae	*Nassarius gaudiosus*	NA	NE			2016													
Nassariidae	*Nassarius jacksonianus*	LC	NL				SIBS			SIBS					2013	2012			
Nassariidae	*Nassarius limnaeiformis*	NA	NE			2020				2020						2020			
Nassariidae	*Nassarius livescens*	LC	NL			SIBS; 2020	2020			SIBS; 2020	SIBS; 2020			2020	2020	2020	2020		
Nassariidae	*Nassarius multivocus*	NA	NE			2013													
Nassariidae	*Nassarius nodifer*	NA	NE											2019		2012			
Nassariidae	*Nassarius olivaceus*	LC	NL							2020					2013	2020			
Nassariidae	*Nassarius pullus*	DD	NL				2020			2020	2020			2020	2013	2020			
Nassariidae	*Nassarius quadrasi*	NA	NE			2013						2013			2013	2013			
Nassariidae	*Nassarius teretiusculus*	NA	NE								SIBS								

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Nassariidae	*Reticunassa paupera*	NA	NE				2016	2013								2016			
Naticidae	*Natica gualteriana*	NA	NE			2020				SIBS; 2020	2020			2020	2020	2020			2020
Naticidae	*Natica vitellus*	NA	NE			2020													
Naticidae	*Naticarius onca*	NA	NE			2020	2020			2020	2020			2020		2020			
Naticidae	*Naticarius zonalis*	NA	NE			2020					SIBS; 2020			2020		2020	2020		
Naticidae	*Notocochlis cernica*	NA	NE													2016			
Naticidae	*Notocochlis gualtieriana*	NA	NE											2019		2010			
Naticidae	*Notocochlis tigrina*	LC	NL								SIBS; 2020								
Naticidae	*Paratectonatica tigrina*	NA	NE													2012			
Naticidae	*Polinices albumen*	NA	NE			2020				2020									
Naticidae	*Polinices flemingianus*	NA	NE			2016													
Naticidae	*Polinices mammilla*	LC	NL	SIBS		SIBS; 2020	SIBS; 2020			SIBS; 2020	2020	2020		SIBS; 2020	2020	2020	SIBS	SIBS; 2020	2020
Naticidae	*Polinices peselephanti*	NA	NE													2012			
Naticidae	*Polinices powisianus*	NA	NE				2016												
Naticidae	*Tanea areolate*	NA	NE			2020					2020			2020	2020		2020		
Naticidae	*Tanea lineata*	LC	NL			2020										2020			

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Neritidae	*Clithon faba*	LC	NL													2012			
Neritidae	*Clithon oualaniense*	LC	LC								2020					2020	SIBS; 2020		
Neritidae	*Neripteron cornucopia*	LC	NL													2020			
Neritidae	*Neripteron siquijorense*	NA	NE													2012			
Neritidae	*Neripteron violaceum*	LC	NL				SIBS									2020			
Neritidae	*Nerita albicilla*	LC	NL				SIBS; 2020	SIBS; 2020		2020	2020	2020		2020	SIBS; 2020	2020	2020	2020	
Neritidae	*Nerita articulata*	LC	LC													2020	SIBS	SIBS	
Neritidae	*Nerita balteata*	NA	LC													2007			
Neritidae	*Nerita chamaeleon*	LC	NL				SIBS; 2020	SIBS; 2020		SIBS; 2020	2020	SIBS		SIBS; 2020	SIBS; 2020	2020	2020	2016	
Neritidae	*Nerita costata*	NA	NE													2013			
Neritidae	*Nerita essingtoni*	NA	NE													2012			
Neritidae	*Nerita histrio*	LC	NL				SIBS; 2013							2019	2013	2012	2018		
Neritidae	*Nerita litterata*	NA	NE					2013							2013				
Neritidae	*Nerita planospira*	NT	NL												2013	2012			
Neritidae	*Nerita plicata*	NA	NE													2013			
Neritidae	*Nerita polita*	NA	NE					2020		2020					2020	2020	2020		
Neritidae	*Nerita squamulata*	NA	NE				SIBS; 2009			2020	2020	2020			SIBS; 2013	2020	SIBS; 2020	2020	

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Neritidae	*Nerita squamulosa*	NA	NE	2007															
Neritidae	*Nerita undata*	NA	NE	2007			SIBS; 2020	SIBS; 2020		SIBS; 2020	2020	SIBS; 2020		SIBS; 2020	SIBS; 2020	2020	SIBS; 2020	2020	
Neritidae	*Nerita undulata*	NA	NE								2013					2010	2020		
Neritidae	*Smaragdia souverbiana*	NA	NE			SBR													
Olividae	*Oliva miniacea*	VU	NL			2020								2020					
Olividae	*Oliva mustelina*	NA	NE	SIBS		2020										2020	2020		
Olividae	*Oliva oliva*	NA	NE													2020			
Olividae	*Oliva tigridella*	NA	NE			2020													
Onchidiidae	*Peronia* sp “singapore”	NA	NE											2019	2019				
Onchidiidae	*Peronia verruculata*	NA	NE	SIBS											SIBS	2012			
Onchidiidae	Family Onchidiidae sp “big pimply”	-	-			2020	2020	2020		2020	SIBS; 2020	2020		2020	2020	2020	SIBS; 2020	2020	2020
Onchidiidae	Family Onchidiidae sp “long”	-	-													2020			
Onchidiidae	Family Onchidiidae sp “ornate”	-	-												2020	2020	2020		
Onchidiidae	Family Onchidiidae sp “smooth”	-	-																
Ovulidae	*Aclyvolva lanceolata*	NA	NE											2018					
Ovulidae	*Diminovula margarita*	NA	NE								SBR								

SBR = Singapore Biodiversity Record

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Ovulidae	*Pellasimnia improcera*	NA	NE													2012			
Ovulidae	*Phenacovolva barbieri*	NA	NE								2013								
Ovulidae	*Phenacovolva nectarea*	NA	NE											2019		2012			
Ovulidae	Family Ovulidae sp “soft coral false”	-	-				2020												
Oxynoidae	*Lobiger viridis*	NA	NE															2020	
Phyllidiidae	*Phyllidia elegans*	NA	NE				2018	2013						2019	2013	2012	2015		2018
Phyllidiidae	*Phyllidia exquisita*	NA	NE											2018					
Phyllidiidae	*Phyllidia ocellata*	NA	NE				2018	2020		2013				2019	2013	2012			
Phyllidiidae	*Phyllidia picta*	NA	NE											2019					
Phyllidiidae	*Phyllidia varicosa*	NA	NE	2013			2020	2020		2013				2020	2020	2020			
Phyllidiidae	*Phyllidiella nigra*	NA	NE	SIBS		2020	2020	SIBS; 2020		2020	2020	SIBS; 2020	SIBS	2020	2020	2020	2020	2020	2020
Phyllidiidae	*Phyllidiella pustulosa*	NA	NE	2013	SIBS	SIBS; 2020	2020	SIBS; 2020		2020			SIBS	2020	2020	2020	SIBS; 2020	2020	2020
Phyllidiidae	*Phyllidiella rudmani*	NA	NE				2018	2013						2019	2019				2018
Phyllidiidae	*Phyllidiopsis fissurata*	NA	NE											2019					
Phyllidiidae	*Phyllidiopsis krempfi*	NA	NE				2018	2018						2018					
Pisaniidae	*Pollia fumosus*	NA	NE					n.d.											

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Plakobranchidae	*Elysia chilkensis*	NA	NE											2019					
Plakobranchidae	*Elysia marginata*	NA	NE								2018			2018			SIBS		
Plakobranchidae	*Elysia ornata*	NA	NE	SIBS; 2007		SIBS; 2020	SIBS; 2020	SIBS; 2020		SIBS; 2020	SIBS; 2020	2020	SIBS	2020	SIBS; 2020	2020	SIBS; 2020	SIBS; 2020	2020
Plakobranchidae	*Elysia pusilla*	NA	NE				2013	SIBS								2020	2020		
Plakobranchidae	*Elysia* sp "wooly"	NA	NE			2020		2020						2020	2020		2020	2020	
Plakobranchidae	*Plakobranchus ocellatus*	NA	NE													2012			
Plakobranchidae	*Thuridilla gracilis*	NA	NE				2018	2013						2018		2012			
Planaxidae	*Planaxis sulcatus*	LC	NL	2007			2020	2020		2020	2020	SIBS; 2020		2020	SIBS; 2020	2020	2020	SIBS; 2020	2020
Pleurobranchaeidae	*Euselenops luniceps*	NA	NE				2020							2020					
Pleurobranchidae	*Pleurobranchus forskalii*	NA	NE			2020					SIBS; 2020					2020			
Pleurobranchidae	*Pleurobranchus weberi*	NA	NE				SBR												
Polyceridae	*Gymnodoris alba*	NA	NE													2012			
Polyceridae	*Gymnodoris citrina*	NA	NE	SIBS												2012			
Polyceridae	*Gymnodoris impudica*	NA	NE				2020							2019	2020	2020			
Polyceridae	*Gymnodoris pseudobrunnea*	NA	NE											2019					
Polyceridae	Gymnodoris sp "tiny black"	-	-							2020					2016	2020			
Polyceridae	*Kaloplocamus acutus*	NA	NE				SBR												

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Polyceridae	*Nembrotha lineolata*	NA	NE				SBR												
Polyceridae	*Nembrotha livingstonei*	NA	NE									SBR							
Polyceridae	*Polycera capensis*	NA	NE											2019					
Polyceridae	*Polycera risbeci*	NA	NE				SBR												
Polyceridae	*Tambja sagamiana*	NA	NE				SBR												
Polyceridae	*Tyrannodoris nikolasi*	NA	NE				2018							2018					
Potamididae	*Cerithidea obtusa*	LC	NL													2020			
Potamididae	*Cerithidea quoyii*	LC	NL													2020			
Potamididae	*Pirenella alata*	LC	NL													2012			
Potamididae	*Pirenella cingulata*	LC	NL							2020					2016	2020			
Potamididae	*Pirenella microptera*	NA	NE													2012			
Potamididae	*Telescopium telescopium*	LC	LC												2016	2020	2020		
Potamididae	*Terebralia palustris*	EN	DD													2013			
Potamididae	*Terebralia sulcata*	LC	NL							2020					SIBS; 2016	2020			
Pseudomelatomidae	*Funa jeffreysii*	NA	NE	2016															
Pseudomelatomidae	*Inquisitor alabaster*	NA	NE	2013															
Pyramidellidae	*Eulimella ventricosa*	NA	NE													2012			
Pyramidellidae	*Milda ventricosa*	LC	NL			2016										2016	2020		

SBR = Singapore Biodiversity Record

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Pyramidellidae	*Otopleura auriscati*	NA	NE				2020				2020			2020	2020	2012			
Pyramidellidae	*Otopleura nodicincta*	NA	NE				2013												
Ranellidae	*Gyrineum natator*	LC	NL					n.d.						2019	2019	2012	2020	2016	
Rissoidae	*Rissoina striata*	NA	NE					2016				2016							
Samlidae	*Samla bicolor*	NA	NE	SIBS															
Scyllaeidae	*Crosslandia daedali*	NA	NE												2020				
Scyllaeidae	*Notobryon wardi*	NA	NE													2012			
Siliquariidae	*Tenagodus anguinus*	NA	NE	2016															
Siliquariidae	*Tenagodus armatus*	NA	NE	2016															
Siliquariidae	*Tenagodus cumingii*	NA	NE	2016							2016				2016	2016			
Siliquariidae	*Tenagodus ponderosus*	NA	NE													2012			
Siphonariidae	*Siphonaria atra*	NA	NE	SIBS			2020	2020		2020	2020	2020		2020	SIBS; 2016	2020			
Siphonariidae	*Siphonaria guamensis*	NA	NE				2009	n.d.		2020				2020	SIBS; 2020	2020	2018		2013
Siphonariidae	*Siphonaria javanica*	NA	NE				2009	2020				2020		2020	2020			2020	
Siphonariidae	*Siphonaria laciniosa*	NA	NE									2016			2016	2012			
Strombidae	*Canarium urceus*	LC	NL		SIBS	SIBS; 2020	SIBS; 2020	2016		SIBS; 2020	2020	2016		2020	SIBS; 2020	SIBS; 2020	SIBS; 2020	2020	2016

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Strombidae	*Dolomena variabilis*	NA	NE				2016									2012			
Strombidae	*Doxander vittatus*	NA	NE												2020	2012			
Strombidae	*Doxander vittatus apicatus*	NA	NE												2020				2013
Strombidae	*Laevistrombus canarium*	NA	NE								2013				2016		SIBS; 2018		
Strombidae	*Laevistrombus turturella*	LC	NL			2020	2020		2020	2020	2020			2020	2020	2020	2020		2020
Strombidae	*Lambis lambis*	NT	NL	SIBS	SIBS	SIBS; 2020	SIBS; 2020	SIBS; 2020		SIBS; 2020	SIBS; 2020	SIBS; 2020	SIBS	2020	2020	SIBS; 2020	SIBS; 2020	SIBS	2020
Strombidae	*Margistrombus marginatus*	NA	NE													2012			
Strombidae	*Margistrombus robustus*	NA	NE			2020					2020			2020	2020	2020			
Tegulidae	*Rochia maxima*	LC	NL														2020		
Tegulidae	*Rochia nilotica*	VU	NE													2012	2018	SIBS	
Tegulidae	*Tectus niloticus*	VU	NE	SIBS		2020	2020	SIBS; 2020	2020	2020	SIBS; 2020	SIBS; 2020		2020	SIBS; 2020	2020	2020	2020	2020
Terebridae	*Oxymeris maculata*	NA	NE							SBR									
Terebridae	*Terebra triseriata*	NA	NE				SBR												
Tergipedidae	*Cuthona sibogae*	NA	NE				2013	2013	2020		2013					2012			2013
Tegulidae	*Rochia nilotica*	VU	NE													2012	2018	SIBS	
Tegulidae	*Tectus niloticus*	VU	NE	SIBS		2020	2020	SIBS; 2020	2020	2020	SIBS; 2020	SIBS; 2020		2020	SIBS; 2020	2020	2020	2020	2020

SBR = Singapore Biodiversity Record

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Terebridae	*Oxymeris maculata*	NA	NE							SBR									
Terebridae	*Terebra triseriata*	NA	NE				SBR												
Tergipedidae	*Cuthona sibogae*	NA	NE				2013	2013	2020		2013					2012			2013
Tethydidae	*Melibe viridis*	NA	NE			2020										2020	2020		
Tonnidae	Family Tonnidae sp "banded"	-	-			2020													
Tonnidae	*Tonna dolium*	NA	NE														2020		
Trinchesiidae	*Phestilla fuscostriata*	NA	NE											SBR					
Trinchesiidae	*Phestilla lugubris*	NA	NE									SIBS							
Trinchesiidae	*Trinchesia sibogae*	NA	NE											2018					
Triphoridae	*Inella japonica*	NA	NE								2016				2016				
Triphoridae	*Litharium kurodai*	NA	NE								2016				2016				
Triphoridae	*Litharium marceda*	NA	NE								2016				2016				
Triphoridae	*Nototriphora alba*	NA	NE								2016				2016				
Triphoridae	*Triphora taeniolata*	NA	NE								2016				2016				
Triphoridae	*Viriola tricincta*	NA	NE								2016				2016				
Tritoniidae	*Marianina rosea*	NA	NE				2018									2012			
Tritoniidae	*Tritoniopsis elegans*	NA	NE							SBR									
Triviidae	*Trivirostra oryza*	NT	NL			2016	2016					2016		2016		2016			

SBR = Singapore Biodiversity Record

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Trochidae	*Austrocochlea porcata*	NA	NE											2019					
Trochidae	*Cadlinella ornatissima*	NA	NE											2019					
Trochidae	*Chrysostoma paradoxum*	LC	NL			2016		2020				2016				2016			
Trochidae	*Clanculus denticulatus*	NA	NE				2013												
Trochidae	*Clanculus margaritarius*	NA	NE												2016				
Trochidae	*Ethminolia vitiliginea*	NA	NE								2016								
Triphoridae	*Litharium kurodai*	NA	NE								2016				2016				
Triphoridae	*Litharium marceda*	NA	NE								2016				2016				
Triphoridae	*Nototriphora alba*	NA	NE								2016				2016				
Triphoridae	*Triphora taeniolata*	NA	NE								2016				2016				
Triphoridae	*Viriola tricincta*	NA	NE								2016				2016				
Tritoniidae	*Marianina rosea*	NA	NE				2018									2012			
Tritoniidae	*Tritoniopsis elegans*	NA	NE							SBR									
Triviidae	*Trivirostra oryza*	NT	NL			2016	2016					2016		2016		2016			
Trochidae	*Austrocochlea porcata*	NA	NE											2019					
Trochidae	*Cadlinella ornatissima*	NA	NE											2019					

SBR = Singapore Biodiversity Record

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Trochidae	*Chrysostoma paradoxum*	LC	NL			2016		2020				2016				2016			
Trochidae	*Clanculus denticulatus*	NA	NE				2013												
Trochidae	*Clanculus margaritarius*	NA	NE												2016				
Trochidae	*Ethminolia vitiliginea*	NA	NE								2016								
Trochidae	*Monodonta labio*	LC	NL				SIBS; 2020	2020		2020	2020	2020		2020	SIBS; 2020	2020	SIBS; 2020	2020	
Trochidae	*Steromphala umbilicaris*	NA	NE											2019					
Trochidae	*Stomatolina angulata*	NA	NE														2020		
Trochidae	*Trochus maculatus*	LC	NL			2016	2020	2020		2020	2020	SIBS; 2020		2020	SIBS; 2020	2020	SIBS; 2020	2016	2020
Turbinidae	*Astralium calcar*	LC	NL			2020		SIBS			2020					2020			
Turbinidae	*Turbo bruneus*	LC	NL			2020	2020	2020				2020		2020	SIBS; 2020	2020	2020	SIBS; 2020	
Turbinidae	*Turbo intercostalis*	NA	NE	SIBS		SIBS; 2020	SIBS; 2020	SIBS; 2020		2020	SIBS; 2020	SIBS; 2020		2020	SIBS; 2020	2020	SIBS; 2020	SIBS; 2016	2020
Turbinidae	*Turbo marmoratus*	NA	NE														SBR		
Turbinidae	*Turbo petholatus*	VU	NL				2020			2013		SBR							2013
Turbinidae	*Turbo reevei*	NA	NE					2016											

SBR = Singapore Biodiversity Record

Appendix 4 continued. Locations of gastropod species found in Southern Island intertidal waters from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation. SBR = Singapore Biodiversity Record

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Turridae	*Turridrupa albogemmata*	NA	NE													2016			
Turridae	*Turris nadaensis*	NA	NE											2016					
Turridae	*Turris undosa*	NA	NE								SBR								
Unidentiidae	*Unidentia sandramillenae*	NA	NE											2018					
Vanikoridae	*Macromphalus tornatilis*	NA	NE								2016				2016				
Vanikoridae	*Macromphalus styliferinus*	NA	NE								SBR								
Volutidae	*Cymbiola nobilis*	NT	NL		SIBS	SIBS	2020					2020				2020			2020
Volvatellidae	*Volvatella maculata*	NA	NE								SBR								

SBR = Singapore Biodiversity Record

Appendix 5. Locations of terrestrial and freshwater gastropod species found in Southern Islands, from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation.

Family	Scientific name	RDB3	IUCN	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Achatinidae	*Achatina fulica*	NE	NE						SIBS						SIBS; 2013	2012	SIBS		
Ampullariidae	*Pomacea canaliculata*	LC	NE														SIBS		
Ariophantidae	*Hemiplecta humphreysiana*	NE	NE								SIBS								
Ariophantidae	*Macrochlamys indica*	NE	NE												SIBS				
Ariophantidae	*Macrochlamys resplendens*	NE	NE														SIBS		
Ariophantidae	*Parmarion martensi*	NE	NE														SIBS		
Dyakiidae	*Quantula striata*	LC	NL						SIBS		SIBS						SIBS		
Subulinidae	*Subulina octona*	LC	NE								(1)								
Veronicellidae	*Laevicaulis alte*	NE	NE														SIBS		

(1): pers. obs. outside period of SIBS surveys.

Appendix 6. Locations of polyplacophoran (chiton) species found in Southern Islands, from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates species was observed during Southern Islands Biodiversity Survey 2019-2022. Year corresponds to year of most recent publication or NParks internal record with species observation.

Family	Scientific name	RDB3	IUCN	HNT	LAZ	SJI	SNT
Chitonidae	*Acanthopleura gemmata*	NT	NE	2016	2020	2020	SIBS

Appendix 7. Locations of mollusc taxa identified only to genus level found in Southern Islands, from published, unpublished literature and Southern Islands Biodiversity Survey (SIBS). SIBS indicates taxa was observed during Southern Islands Biodiversity Survey 2019-2022. SBR indicates taxa was from a published Singapore Biodiversity Record. Year corresponds to year of most recent publication or NParks internal record with species observation.

Family	Scientific name	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Bivalvia																	
Anomiidae	*Monia* sp													2012			
Anomiidae	*Pododesmus* sp													2013			
Arcidae	*Barbatia* sp		SIBS	2020		SIBS							2020	2020	SIBS; 2020	2020	2020
Cardiidae	*Fragum* sp													2012			
Chamidae	*Chama* sp																
Clavagellidae	*Bryopa* sp							2013									
Corbulidae	*Corbula* cf *scaphoides*													2012			
Corbulidae	*Corbula* sp													2013			
Galeommatidae	*Galeomma* sp											2019	2013				
Galeommatidae	*Scintilla* sp					2013				2013			2013	2012		2013	2013
Gastrochaenidae	*Gastrochaena* sp					2013											
Gryphaeidae	*Hyotissa* sp													2013			
Limidae	*Ctenoides* sp													2012			
Limidae	*Lima* sp									2013							
Limidae	*Limaria* sp			2013	SBS	2013						2013	2013	2013	SIBS; 2020		2020

Appendix 7. Continuation.

Family	Scientific name	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Bivalvia																	
Anomiidae	*Monia* sp													2012			
Lucinidae	*Cardiolucina* sp														2015		
Lucinidae	*Divaricella* sp													2012			
Margaritidae	*Pinctada* cf *maxima*													2012			
Malleidae	*Malleus* sp		SIBS	2020	SIBS; 2020								2020	2020	SIBS	SIBS; 2013	2020
Mytilidae	*Brachidontes* sp													2012	2020		
Mytilidae	*Modiolus* sp			SIBS	2016								2013	2012	2020		
Mytilidae	*Septifer* cf *excisus*													2012			
Mytilidae	*Xenostrobus* sp														2020		
Noetiidae	*Verilarca* sp													2012			
Ostreidae	*Crassostrea* sp						2015								2015		
Ostreidae	*Saccostrea* sp														2015		
Pectinidae	cf *Pedum spondyloideum*				SIBS												
Pharidae	*Cultellus* sp													2013			
Pinnidae	*Atrina* sp											2019	2013				
Pinnidae	*Pinna* cf *bicolor*																2013
Pinnidae	*Pinna* sp								2013						2013		
Pinnidae	*Vexillum* sp											2019					
Placunidae	*Placuna* cf *ephippium*													2013			
Placunidae	*Placuna* sp	SIBS		2020	SIBS; 2020		2020	2020				SIBS; 2017	2020	2020		2020	
Plicatulidae	*Plicatula* sp	2013															
Pteriidae	*Isognomon* sp											2019	2013	2013			

Appendix 7. Continuation.

Family	Scientific name	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Bivalvia																	
Anomiidae	*Monia* sp													2012			
Pteriidae	*Pinctada* sp	2013			2016		2015					2013	2013	2013	2015		2013
Pteriidae	*Pteria* sp												2013				
Solenidae	*Solen* sp													2012			
Spondylidae	*Spondylus* cf *americanus*												2012				
Spondylidae	*Spondylus* sp	2013		SIBS	2020	2013		2013				2018	2013		2015		2013
Tellinidae	*Arcopaginula* cf *inflata*												2012				
Tellinidae	*Semele* sp				2016												
Tellinidae	*Serratina* cf *capsoides*													2012			
Tellinidae	*Tellina* sp													2012			
Veneridae	*Globivenus toreuma?*	2013															
Veneridae	*Venus* sp											2013					
Vulsellidae	*Vulsella* sp			2020									2020			2020	
Cephalopoda																	
Idiosepiidae	*Idiosepius* sp			SIBS; 2020	2020	SIBS		2020	2020	2020		2020	2020	SIBS; 2020	2020		
Octopodidae	*Abdopus* sp			2013						2013		2013		2013	2020		2013
Octopodidae	*Amphioctopus* sp								SBR			SBR					
Octopodidae	*Octopus* cf *vitiensis*											2019					
Octopodidae	*Octopus* sp	SIBS; 2007								SIBS		SBR		2012			2018
Sepiidae	*Sepia* cf *papuensis*												2010				
Sepiidae	*Sepia* cf *recurvirostra*								2013								
	Sepia sp				2013		2015		2018								

Appendix 7. Continuation.

Family	Scientific name	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Bivalvia																	
Anomiidae	*Monia* sp													2012			
Gastropoda																	
Actinocyclidae	*Actinocyclus* sp														2020		
Aegiridae	*Aegires* cf *execheS*				SBR												
Aegiridae	*Aegires* sp				SBR												
Aeolidiidae	*Cerberilla* sp			2020													
Aglajidae	*Chelidonura* sp			2020													
Amphibolidae	*Salinator* cf *fragilis*													2007			
Aplustridae	*Hydatina* sp													2012			
Aplysiidae	*Phyllaplysia* sp			2020	2020								2020	2020	2020		
Aplysiidae	*Stylocheilus* sp			2020					2020				2020	2020			
Arminidae	*Dermatobranchus* sp	SIBS				2020		2020	2020			2020	2020	2012	2020		2020
Assimineidae	*Assiminea* sp													2020			
Bornellidae	*Bornella* sp											2018	2017				
Buccinidae	*Engina* sp							2013									
Buccinidae	*Nassaria* sp	2013															
Buccinidae	*Phos* sp	2016															
Calliostomatidae	*Calliostoma* cf *scobinatum*				2013												
Calliostomatidae	*Calliostoma* sp				2016			2016					2016				
Cephalaspidea in certae sedis	*Noalda* sp				SBR												
Cerithiidae	*Cerithium* aff *scabridum*												2007				
Cerithiidae	*Cerithium* sp												2013				

Appendix 7. Continuation.

Family	Scientific name	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Bivalvia																	
Anomiidae	*Monia* sp													2012			
Chilodontaidae	*Euchelus* sp					2020		2020	2020			2020	2020	2020	2020		
Chromodorididae	*Hypselodoris* sp											2019					
Columbellidae	*Mitrella* cf *scripta*					2000											
Columbellidae	*Mitrella* sp											2013		2012			
Columbellidae	*Pardalinops* sp		SIBS						SIBS	SIBS							
Costasiellidae	*Costasiella* sp			SIBS; 2020	2020			2020	2020			2020	2020	2020		2020	2020
Cypraeidae	*Bistolida* sp							2013						2013			
Cypraeidae	*Cypraea* sp					2000			2013	2013			2013				
Cypraeidae	*Erronea* cf *caurica*							2013									
Cypraeidae	*Erronea* sp									2013			2013				
Dendrodorididae	*Dendrodoris* cf sp				2013			2013									
Dendrodorididae	*Dendrodoris* sp									2013							
Discodorididae	*Discodoris* sp			2013													2013
Discodorididae	*Paradoris* sp														2015		
Discodorididae	*Sebadoris* cf *fragilis*													2012			
Doridae	*Doris* cf sp												2013				
Doridomorphidae	*Doridomorpha* sp							2013									
Dotidae	*Doto* sp	2013			2018							2019		2012			
Dotidae	*Kabeiro* sp											2018					
Ellobiidae	*Ellobium* sp													2020			
Ellobiidae	*Laemodonta* sp													2012			
Ellobiidae	*Melampus* sp													2012			

Appendix 7. Continuation.

Family	Scientific name	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Bivalvia																	
Anomiidae	*Monia* sp													2012			
Ellobiidae	*Pythia* sp													2020			
Eubranchidae	*Eubranchus* sp											2018					
Eulimidae	*Vitreobalcis* sp			SBR													
Facelinidae	*Cratena* sp				2018												
Facelinidae	*Godiva* sp				SBR									2013			
Facelinidae	*Phyllodesmium* sp															2013	
Facelinidae	*Pruvotfolia* sp				SBR												
Fissurellidae	*Emarginula* sp	2013															
Fissurellidae	*Scutus* sp				2013			2013									
Flabellinidae	*Coryphellina* sp				2018		2020										
Flabellinidae	*Flabellina* sp													2012			
Goniodorididae	*Goniodoris* sp											2018					
Gymnodorididae	*Gymnodoris* sp				2018							2019	2013				
Haminoeidae	*Haminoea* cf *vitrea*													2007			
Haminoeidae	*Haminoea* sp													2020			
Hipponicidae	*Cheilea* sp	2013															
Juliidae	*Berthelinia* cf *singaporensis*											SBR					
Limapontiidae	*Placida* sp			2020				2020				2020	2020		2020	2020	2020
Littorinidae	*Echinolittorina* cf *malaccana*											SIBS					
Littorinidae	*Littoraria* cf *articulata*												2010				
Littorinidae	*Littoraria* sp				2016								2013				

Appendix 7. Continuation.

Family	Scientific name	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Bivalvia																	
Anomiidae	*Monia* sp													2012			
Littorinidae	*Littorina* sp												2013				
Lottiidae	*Patelloida* sp				2009								2017			2013	
Lucinidae	*Chavania* sp	2013															
Mitridae	*Mitra* sp													2007			
Muricidae	*Chicoreus* cf *brunneus*					SIBS											
Muricidae	*Chicoreus* cf *torrefactus*												2013				
Muricidae	*Chicoreus* sp		SIBS			SIBS							SIBS				
Muricidae	*Morula* sp					SIBS; 2020	2020		2020		220	2020	2020				
Muricidae	*Nucella* sp												2013				
Muricidae	*Thais* sp	2007													SIBS		
Nacellidae	*Cellana* sp														2020	SIBS	
Nassariidae	*Nassarius* sp								2013								
Naticidae	*Sinum* sp			2020										2020			
Neritidae	*Nerita* cf *polita*				SIBS	SIBS											
Neritidae	*Nerita* sp												2017				
Olividae	*Oliva* cf *tigridella*			SIBS													
Onchidiidae	*Onchidina* sp					2000			2013				2013	2007			
Onchidiidae	*Peronia* cf *verruculata*								2013								
Onchidiidae	*Peronia* sp					2000						2019	2013				
Onchidiidae	*Platyvindex* sp													2020			
Ovulidae	*Dentiovula* sp											2019					
Ovulidae	*Pellasimnia* sp				2020												

Appendix 7. Continuation.

Family	Scientific name	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Bivalvia																	
Anomiidae	*Monia* sp													2012			
Ovulidae	*Phenacovolva* sp				2013								2013				
Phyllidiidae	*Phyllidia* cf *nigra*													2013			
Phyllidiidae	*Phyllidia* sp									2013		2013	2013	2013		2013	
Pisaniidae	*Pollia* aff *fumosus*					2000											
Plakobranchidae	*Elysia* sp			2013				2013				2019		2013		2019	
Plakobranchidae	*Thuridilla* sp					2020			2013			2019	2020	2020		2020	
Pleurobranchidae	*Berthellina* sp				2018									2013			
Polyceridae	*Nembrotha* sp				SBR												
Polyceridae	*Tambja* sp				2018	2018						2018					2018
Ranellidae	*Cymatium* sp				2020	2020		2020	2020	2020				2020			
Rissoinidae	*Zebinella* sp													2012			
Scyllaeidae	*Notobryon* sp											2020					
Siliquariidae	*Tenagodus* sp	2013															
Siphonariidae	*Siphonaria* sp											2019					
Strombidae	*Strombus* sp														2015		2013
Tethydidae	*Melibe* sp				SBR												
Trinchesiidae	*Phestilla* sp											2018					
Trinchesiidae	*Trinchesia* sp				2018												
Trochidae	*Clanculus* cf *atropurpureus*				2013												
Trochidae	*Clanculus* cf *bronni*													2012			
Trochidae	*Clanculus* sp					2000											
Trochidae	*Trochus* sp															2013	

Appendix 7. Continuation.

Family	Scientific name	BIO	BRK	CYR	HNT	JNG	KEP	KUS	LAZ	RAL	SAL	SIS	SJI	SMK	SNT	TKR	TPS
Bivalvia																	
Anomiidae	*Monia* sp													2012			
Turbinidae	*Turbo* sp	SIBS										2019	2019				
Velutinidae	*Lamellaria* sp			SBR					SBR	SBR					SBR		
Vermetidae	*Eualetes* cf *tulipa*				2009								2009				
Vermetidae	*Thylacodes* sp													2016			
Vermetidae	*Vermetus* sp												2013	2012			
Veronicellidea	cf *Laevicaulis alte*														SIBS		
Volvatellidae	*Volvatella* sp			2020					SBR				2020	2020			
Polyplacophora																	
Chitonidae	*Lucilina* sp											2019					
Ischnochitonidae	*Lepidozona* sp												2012				