Physical/Biological Characteristics of Local Units in the HIMI Marine Reserve

Local Unit	Physical Characteristics	Biological Characteristics
Coral Bank	– mesa-like bank rising steeply from deep water – flat but rugged top with pinnacles, boulders and sand – 300 – 500 m deep – locally highly productive in relatively warm, nutrient-rich waters as it is influenced by relatively warm water of the ACC	– rich benthic fauna, including slow-growing gorgonian corals – affinity with Aurora Bank – stalked barnacles only found here – the echinoid *Eurocidaris nutrix* only found here and on the other banks* – localised distribution of the ophiuroid *Astrotoma agassizii* – productive area for meso-pelagic fish – habitat for juvenile *D. eleginoides* and skates – similar fish fauna to Aurora, Discovery and Pike Banks
Discovery Bank	– whale-backed bank rising from the northern plateau – reasonably flat with basaltic sand, but can be pebbly and craggy in places – about 300 – 400 m deep – influenced by relatively warm water of the ACC	– epibenthic fauna consists primarily of anemones, sponges and asteroids – tall erect glass sponges found here and at Shell Bank, north-eastern plateau and eastern trough – the echinoid *Eurocidaris nutrix* only found here and on the other banks* – localised distribution of the echinoid, *Ctenocidaris longispina** – habitat for juvenile *D. eleginoides* and skates – similar fish fauna to Aurora, Coral and Pike Banks
Shell Bank (representative portions)	– isolated mesa-like bank with a flat, even top – steep craggy slopes with a craggy rim – only area with a distinctly different substratum - white sand and uniquely covered with a thick deposit of shell grit – 180 - 350 m deep – cool water – influenced by an eddy of productive water	– rich benthic fauna with high diversity of echinoderms – tall erect glass sponges here and Discovery Bank, north-eastern plateau and eastern trough – only record of a new species of asteroid, *Astropectin* sp. – localised distribution of the asteroid *Rhopiella hirsuta* – the echinoid *Eurocidaris nutrix* only found here and on the other banks* – localised distribution of the holothurian *Cucumaria godeffroyi* – a morphotype of Valvifera isopods of the Family Idoteidae is local to this area, the north-eastern plateau and the eastern trough – distinct population of *C. gunnari* – habitat for juvenile *D. eleginoides* – population of *L. squamifrons* on south edge – part of the main foraging area, including area to the north and east, for many land-based marine predators
Territorial Sea	– substratum is mostly smooth, medium-grain black basaltic sand, with basaltic cobbles and boulders common in the nearshore area – 0 - 300 m deep – substratum disturbed by wave action in water shallower than 200 m, particularly in the north, north-east and eastern areas – southern margins are steep slopes descending to 1000 m deep	– diverse benthic fauna near to the island with affinities to inner southern plateau – a new species of sea cucumber, *Pseudocnus* sp. found here, in the southern plateau inner and the banks – localised distribution of the asteroid *Cycethra verrucosa* – localised distribution of the echinoid *Ctenodaris nutrix* – localised distribution of the holothurians Cucumaria kerguelensis, Cucumaria serrata, Trachythyone lecheri, Psolus ephippifer – localised distribution of the ophiuroids Opiacantha imago, Opiacantha vivipara, Ophiura ambigua – an asteroid morphotype and the ophiuroid, *Ophiacantha vivipara*, are local to this area – foraging area for nearshore flying birds, such as the endemic Heard Island cormorant
Southern Plateau Inner (representative portions)	– broad, flat, hard and even substratum – west, south and east margins are generally steep and undulating to craggy slopes – ground is mostly smooth, medium-grain black basaltic sand and grey silt – 200 – 500 m deep – influenced by relatively warm water of the ACC	– rich benthic fauna with affinities to nearshore areas in the territorial sea – asteroid *Briaster kerguelensis* only found in southern plateau (inner and outer) * – localised distribution of the holothurian *Psolidum incertum* – a new species of holothuroid, *Pseudocnus* sp. found here, in the territorial sea and the banks – very young mackerel icefish have been found here – *D. eleginoides* is widespread with mostly juveniles on

Local Unit	Physical Characteristics	Biological Characteristics
		– the plateau surface – a principal habitat for skates, *C. rhinoceratus* and a variety of less common nototheniids
Southern Plateau Outer (representative portions)	– broad, flat and even substratum – east and west margins generally steep and undulating to craggy slopes – ground is mostly smooth, medium-grain black basaltic sand and grey silt – 300 – 500 m deep – influenced by cooler water from the eastern trough and the relatively warm water of the ACC in the west and north of this unit	– rich benthic fauna with affinities to the eastern trough, such as prawns, shrimps and isopods – variety of asteroids and the polychaetes from the Family Aphroditidae are local to this area – the asteroid *Briaster kerguelensis* only found in the southern plateau (inner and outer) * – localised distribution of the asteroid *Smilasterias triremis* – the asteroid *Bathydiaster loripes obesus* only found here and in the northern plateau* – the ophiuroid *Ophiura* sp.2 only found here and in the northern plateau – soft coral only found here – contains a separate stock of *C. gunnari*, concentrating in the shallow water in the eastern half of the unit – *D. eleginoides* is widespread, but there are mostly juveniles on the plateau surface, with larger fish generally on the slopes – principal habitat for skates, *C. rhinoceratus* and a variety of less common nototheniids
Northern Plateau (representative portions)	– relatively narrow region of the main plateau – very uneven topography – hard substratum of basaltic cobbles, small pinnacles, shell grit, black sand and grey silt – deeper than the southern plateau, averaging about 500 m depth – influenced by cooler water from the eastern trough and the relatively warm water of the ACC in the west and central areas of this unit	– similar benthic fauna to Discovery Bank and the north-eastern plateau – the asteroid *Bathydiaster loripes obesus* only found here and in the southern plateau outer* – *Ophiura* sp.2 only found here and in the southern plateau outer – fewer *D. eleginoides* and skates and a less abundant and diverse fish fauna generally
North-eastern Plateau (representative portions)	– hard substratum with cobbles, yellow sand and grey silt – 500 – 700 m deep which slopes into deeper water in the east	– similar benthic fauna to Shell Bank – tall erect glass sponges found here and at Discovery Bank, Shell Bank, and eastern trough – a morphotype of Valvifera isopods of the Family Idoteidae is unique to this area, Shell Bank and the eastern trough – only record of a new species of holothurian, *Psolus* sp. – only records of three new species of ophiuroid, *Amphiura* sp., *Ophiacantha* sp. and *Ophiomitrella* sp. – localised distribution of the ophiuroid *Asteronyx loveni* – only known location within the HIMI region where Lucifer Sharks (*Etmopterus granulosus*) have been recorded – fish fauna comprising mainly *D. eleginoides* and deeper water species such as the Macrouridae and Moridae – part of the main foraging area, including area to the north and east, for many land-based marine predators
South of HIMI (local unit is only a small portion of AEEZ to south of HIMI)	– relatively warmer water of the ACC moving over the southern parts of the plateau	– no information is available to describe this area except that a number of land-based marine predators forage to the south of the island

*South Australia Museum identification needs to be confirmed

(adapted from Meyer, L., Constable, A. & Williams, R. 2000. *Conservation of marine habitats in the region of Heard Island and the McDonald Islands*. Australian Antarctic Division, Department of the Environment and Heritage, Kingston.)