Victoria's Irreplaceable Marine Biotopes

Guidance June 2025

VICTORIA State Government | Energy, Environment and Climate Action

Acknowledgements

DEECA would like to thank Dr Matt Edmunds for his international scientific review and contributions to the classification of Victoria's marine biotopes.

Photo credit

Top Left: Irreplaceable biogenic bryozoan reef located in the Rhyll Segment of East Arm, Western Port, Victoria. The biogenic reef substrate is comprised of three species of bryozoan: Triphyllozoon munitum, Triphyllozoon moniliferum and Celleporaria foliata that form large colonies of up to 1.5 m vertical relief. This Western Port Bryozoan Reef Community is a rare ecomorphological community, long lived and slow growing. This community is statutory protected by the Flora and Fauna Guarantee Act 1988 (image rights courtesy of Dr Adrian Flynn).

Top Right: Irreplaceable seagrass bed of Posidonia australis in Corner Inlet, Victoria. This seagrass species is geographically constrained to the marine waters of Corner Inlet and Nooramunga. It is a long-lived, slow growing species and has a very long recovery period from disturbance. There are currently no methods that have demonstrated successful restoration outcomes in Victoria. The species is statutory protected by the Flora and Fauna Guarantee Act 1988 (image rights courtesy of Grumpy Turtle Creative).

Bottom Right and Left: Irreplaceable Port Phillip Bay Entrance Deep Canyon Marine Community. This is a highly diverse community of reef-dwelling sessile invertebrates on tide swept circalittoral rock, chiefly sponges, ascidians, bryozoans, hydrozoans and corals. The community covers the reef surface at depths below 20-25 m within a steep-sided underwater canyon up to 100 m deep at the entrance to Port Phillip Bay. The community contains over 271 named species of sponge, 115 of which are endemic. It is also one of only three areas in Victoria known to support a highly diverse hydrozoan fauna. The canyon provides a distinctive environmental setting with strong water currents which influences this mosaic of biotopes that are unique in Victoria. This community is statutory protected by the Flora and Fauna Guarantee Act 1988 (image rights courtesy of Dr Matt Edmunds).

Citation

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We acknowledge and respect Victorian Traditional Owners as the original custodians of Victoria's land and waters, their unique ability to care for Country and deep spiritual connection to it.

We honour Elders past and present whose knowledge and wisdom has ensured the continuation of culture and traditional practices.

DEECA is committed to genuinely partnering with Victorian Traditional Owners and Victoria's Aboriginal community to progress their aspirations.

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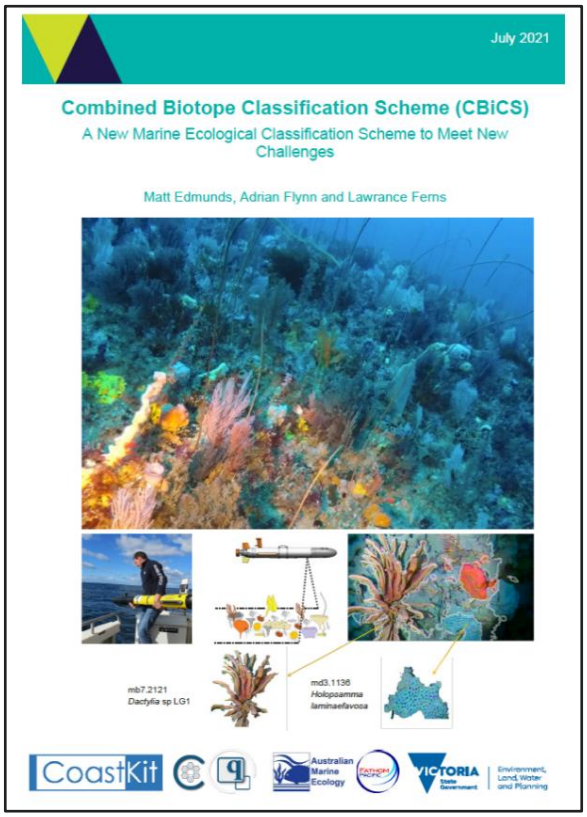
marineandcoasts.vic.gov.au

Victoria's Irreplaceable Marine Biotopes

www.marineandcoasts.vic.gov.au/marine-and-coastal-knowledge/irreplaceable-biotopes

Combined Biotope Classification Scheme (CBICS)

www.marineandcoasts.vic.gov.au/__data/assets/pdf_file/0023/537170/CBiCS-Booklet-July-2021.pdf



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Data access via CoastKit

www.marineandcoasts.vic.gov.au/marine-and-coastal-knowledge/coastkit

The Coastkit knowledge portal provides access to Victoria's marine biotope catalogue survey records, and a statewide marine

CoastKit

Contents

1. Introduction

1.1 What is a marine biotope?

A marine biotope represents a distinct ecological niche where marine organisms thrive. This refers to a specific habitat in the marine environment, including the physical conditions and the associated species community. It's defined based on geographical location, physiographic features, and the physical and chemical environment (Olenin and Ducrotoy 2006, Costello 2009, Edmunds *et al.* 2021). These factors include salinity, wave exposure, tidal strength, geology, biological zones, substratum type (such as rock, sand, or mud), and specific features like crevices or overhangs.

In Victoria, biotopes are classified in a hierarchical catalogue termed the Combined Biotope Classification Scheme or CBiCS described by Edmunds *et al.* (2021). The biotic component is the central classification component of CBiCS, comprising six hierarchical levels (Table 1). The design of this hierarchy and concatenated coding system is adopted directly from the Joint Nature Conservation Council (JNCC) scheme (Connor *et al.* 2004) and the European Nature Information System (EUNIS) schema (refer to www.marlin.ac.uk/habitats/eunis).

Table 1: CBICS hierarchical classification and coding for two biotopes (Edmunds *et al.* 2021)

		Seagrass example		Seaweed example	
CBiCS Level	Descriptor	Biotope code	Title	Biotope code	Title
Level 1	Environment	ba	Marine environment	ba	Marine environment
Level 2	Broad Habitat	ba5	Sublittoral sediment	ba3	Infralittoral rock and other hard substrata
Level 3	Habitat Complex	ba5.8	Sublittoral seagrass beds	ba3.1	High energy infralittoral rock
Level 4	Biotope Complex	Ba5.83	*Zostera, Heterozostera* and *Ruppia* beds	ba3.13	High energy *Ecklonia-Phyllospora* communities
Level 5	Biotope	ba5.831	*Heterozostera nigricaulis* bed	ba3.133	*Ecklonia radiata* and *Phyllospora comosa* on exposed subtidal rock, thallose red algae abundant
Level 6	Sub-biotope	ba5.8311	*Heterozostera nigricaulis* low to sparse	ba3.1331	Open canopy of *Ecklonia* and *Phyllospora* with *Caulerpa obscura*

Biotopes and their constituent species provide a basis for understanding representativeness of marine biodiversity and are now used as the international standard for attributing biodiversity significance, irreplaceability, and the spatial unit to attribute the United Nations System of Environmental Economic Accounting for ecosystem accounting for the ocean.

1.2 Marine biotopes as Key Ecological Features (KEFs)

Marine biotopes can also be designated as KEFs if they are recognised as important for biodiversity or provide an important ecosystem function. For example, a marine biotope may be the critical habitat for the persistence of a threatened species, or it may serve as nursery habitat for a commercial fish species. KEFs may relate to a species (e.g. a predator that impacts a large biomass or number of species), an important

habitat type (e.g. supports high productivity or aggregations of breeding animals), or a unique seafloor or oceanographic feature that positively influences the surrounding ecosystem (e.g. a deep canyon that stimulates upwellings of nutrient rich water). Victoria's marine KEFs will be described in a separate project using scientific criteria for identifying Ecologically or Biologically Significant Marine Areas (Ninth meeting of the Conference of the Parties to the Convention on Biological Diversity, Annex I, Decision IX/20).

2. Irreplaceability

2.1 Definition and considerations

Irreplaceable marine biotopes (habitats) are those which cannot be successfully restored or created (Tillin *et al*. 2022a). The key considerations that deem a biotope 'irreplaceable' or 'not irreplaceable' is based on:

- '**Difficulty of Restoration':** Irreplaceable biotopes are either very slow to recover, or not feasible to restore where:
  - "Very slow" recovery that typically exceeds 25 years.
  - "Not feasible" refers to in-situ restoration that has:
    - unproven scalability
    - no known effective methods, or historically unsuccessful
    - environmental constraints that render current methods as unfeasible

Additionally, secondary considerations pertain to:

- **'Rarity' and 'Uniqueness of the Environment'** which pose challenges and risk for achieving successful restoration. Biotopes can be restricted or rare, based on their known areas of occupancy and distribution. Additionally, certain biotopes may only persist in an environmental setting where the physical substratum, geoform and hydrodynamics of their environment is unique or limited in distribution.

2.2 Criteria

Using the above considerations originally devised by Tillin *et al.* (2022a), a set of standardised criteria with ordinal rank definitions were constructed under categories for natural recovery potential (years to recover); restoration potential and feasibility; rarity (based on number of records, regional distribution); and the uniqueness of the environmental context (Error! Reference source not found.). Each biotope was assessed against the criteria and assigned as 'Irreplaceable' (or not) if scored highly in either 'Recovery' (4 and above) and 'Restoration potential and feasibility' (3 and above) (Error! Reference source not found.**, criteria a and b**); and assigned as 'Restricted or Rare' if scored highly in any of the 'Rarity' (4 and above) and 'Uniqueness of the Environment' (3) criteria (**Error! Reference source not found.**, criteria c, d, and e).

Any marine biotope that was scored high in either 'Irreplaceable' criteria was deemed to pose challenges for recovery, restoration, or re-creation due to a combination of slow recovering, unfeasible to re-create; rarity and/or persisting in a unique environmental context

A statutory protection status was incorporated into the final set of 'Irreplaceability Categories' (Section 2.3). Although not used as a criterion for determining irreplaceability, it is an important consideration for managers, planners and developers. Statutory protection status pertains to a biotope, or a species that is characteristic of a biotope, that is listed under the *Flora and Fauna Guarantee Act 1988* (FFG Act), or the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), or known to occur in a protected area under the *National Parks Act 1975*.

The status of statutory protection of biotopes is based on best available information. It should be used cautiously and is intended as a guideline. A biotope is considered protected if it is located within a marine protected area (MPA) or is part of a listed threatened community, based on available historical surveys. However, this does not guarantee protection in all locations where the biotope occurs. Conversely, a biotope may not be recognized as protected even if it is within an MPA, if this information was not available during the assessment. Statutory listing information can change, so always use the most current data for the FFG and EPBC Acts, and within MPA boundaries. MPAs include Marine National Parks and Marine Sanctuaries, which are highly protected "no-take" areas, while Marine and Coastal Parks, Marine Parks, and Marine Reserves are managed for multiple uses.

Biotopes within the CBICS catalogue that have been historically modified and heavily impacted by anthropogenic activities (e.g. dredge material grounds) or invasive species (e.g. *Spartina spp*. stands) were

scored ‘0’ and deemed ‘not irreplaceable’ because their original ecological characteristics have been altered or lost. These modifications often result in significant changes to the habitat structure, biodiversity, and ecological functions. Consequently, these areas are considered less critical for conservation efforts compared to pristine or minimally impacted regions, as their ecological integrity has already been compromised.

Table 2: Irreplaceability criteria and scoring, scores and definitions are classified irreplaceable

Criteria and considerations	Ordinal score and definition
a. Recovery • Biotopes (or their species) with slow recovery. • Biotopes with slow growth rates, late age of maturity, low fecundity, low or unpredictable recruitment or long lived. .	1. High recovery, < 2 years, longevity < 5 years. 2. Medium recovery, 2-10 years, longevity 5-15. 3. Low recovery, 10-25 years, longevity 15-30 years. **4. Very low recovery, > 25 years, longevity 30-100 years.** **5. Extremely low recovery > 50 years, longevity > 100 years.**
b. Restoration potential and feasibility • Methods are available that can be applied for restoration in situ and or recreation ex situ. • Restoration of habitat and species require different methods. • Restoration potential of the method is determined by method availability, the rate of recovery and the rarity of the habitat and species. • Potential to return to a more natural state under appropriate management.	1. Methods available, historic success in recovering to a similar habitat. 2. Potential methods exist, but there are uncertainties. **3. Potential methods exist, but unproven scalability. Requires substantial investment and operational resources.** **4. No known effective methods, or historical approaches have shown high failure rates.** **5. High exposure, depth, or remoteness renders current methods as unfeasible.**
c. Rarity • Number or records and regional distribution across marine biounits (e.g. Tillin et al., 2022a; Morato et al., 2018). • Environmental envelope required for biotope occupancy and persistence. • Endemic context and uniqueness of a biotope.	1. Not rare (common across most marine biounits; >40 records). 2. Not rare (present across most marine biounits with suitable environmental envelope, but some gaps; >20-40 records). **3. Not rare (present in a few marine biounits, often in narrow range of environmental conditions; 5-20 records).** **4. Restricted (present in 1-3 marine biounits, limited geographically; 5-20 records).** **5. Rare (only present in a single marine biounit at small spatial scale and restricted location. Potentially endemic or unique; <5 records).**
d. Uniqueness of Environment: Physical context • Unusual geomorphic or oceanographic features. • Uniqueness of physical (geoform) habitat, substratum or features such as caves or lagoons.	1. Common, widespread physical setting. 2. Physical setting restricted regionally, within one to two marine biounits or very restricted in extent where it does occur. 3. **Physical setting relatively unique with limited extent and distribution based on substratum and depth.**
e. Uniqueness of Environment: Hydrodynamic context • Uniqueness of hydrodynamic processes, including wave exposure, swells and currents.	1. Common, widespread hydrodynamic conditions. 2. Hydrodynamic setting restricted regionally, may be common within one to two marine biounits, or widespread but in a few locations. **3. Hydrodynamic setting relatively unique with limited extent and distribution based on wind fetch, wave exposure, swells and currents.**

2.3 Irreplaceable categorisation

The ‘Irreplaceable’ score for each biotope and their statutory protection status, were combined into 4 primary categories (Error! Reference source not found.): (1) Irreplaceable - Statutory Protected; (2) Irreplaceable - Not Statutory Protected; (3) Not deemed Irreplaceable - Statutory Protected; and (4) Not deemed Irreplaceable - Not Statutory Protected.

Each primary category was designated with a subcategory of (A) if the biotope is considered restricted or rare; or (B) if the biotope is not considered restricted or rare (Error! Reference source not found.).

Table 3: Irreplaceability categories and subcategories with examples

Category
1. Irreplaceable - Statutory Protected
1A. Rare or restricted distribution
• High energy Macrocystis overstorey communities (ba3.15), which meet criteria for the EPBC listed community: Giant Kelp Marine Forests of Southeast Australia Ecological Community (*Macrocystis pyrifera*) (Figure 1). • Deep jewel anemone communities (ba4.27), which comprises communities within the FFG listed community: Port Phillip Bay Entrance Deep Canyon Marine Community. • Crawfish Rock (ba4.2b2) with FFG listed *Ralpharia coccinea* (stalked hydroid).
1B. Not rare
• *Heterozostera nigricaulis* bed (ba5.831), FFG listed seagrass. • *Heterozostera tasmanica* (ba5.836), FFG listed seagrass. • Ecklonia with subcomponents of Phyllospora, Seiroccoccus and Acrocarpia (ba3.1434), *Ecklonia radiata* with bushy bryozoans, *Seirococcus axillaris* and thallose red algae biotope. Occurs in deep, high-energy waters attached to steep rock surfaces, represented within Wilsons Promontory Marine National Park.
2. Irreplaceable - Not Statutory Protected
2A. Rare or restricted distribution
• High to moderate energy tide-swept Ecklonia-Phyllospora communities (ba3.1c), occurs in high energy infralittoral rock facies, located in a small number of tidal channels. • Thallose red algae with abundant *Cenolia trichoptera* feather stars (Ninety Mile Beach A) (ba3.19d1). Only known from high energy infralittoral rock and sandy veneer facies within the 90 Mile Beach biounit.
2B. Not rare
• Foliose red seaweeds on upper infralittoral rock - high energy (ba3.18). These biotopes are found in several locations of Victoria; however, any restoration efforts would be environmentally constrained.
3. Not deemed Irreplaceable - Statutory Protected
3A. Rare or restricted distribution
• Several biotopes of coastal saltmarsh aggregate and estuarine wetland ecological vegetation communities in Victoria defined as EPBC listed community: Subtropical and Temperate Coastal Saltmarsh.
3B. Not rare
• Aviccenia Mangrove Shrubland (EVC140) (bab.11), includes FFG listed *Avicennia marina subsp. Australasica* and can be found in French Island Marine National Park among other locations.
4. Not deemed Irreplaceable - Not Statutory Protected
4A. Rare or restricted distribution
• Seasonally Inundated Sub-saline Herbland (EVC 196) (baa.e1) and Brackish Grassland (EVC 934) (baa.f1.)
4B. Not rare
• Numerous littoral rock and sediment biotopes of intertidal rocky shores and sandy dunes respectively. Biotopes historically modified and heavily impacted by anthropogenic activities (e.g. dredge material grounds) or invasive species (e.g. Spartina spp. stands).

3. Summary

The current inventory of category 1 and category 2 irreplaceable biotopes is itemised according to the CBICS schema in section 4 (below). Future updates and additions accessed through the Marine and Coastal Knowledge website at www.marineandcoasts.vic.gov.au/marine-and-coastal-knowledge.

The identification and classification of irreplaceable marine biotopes serve to guide decisions regarding the sensitivity, risk, and consequences associated with disturbances by anthropogenic activities and pressures. By pinpointing these irreplaceable biotopes, planners and developers can avoid actions that would result in irreversible damage given challenges in re-creating them elsewhere.

Additionally, this classification aims to inspire scientists to develop technically feasible restoration methods for certain biotopes currently considered irreplaceable. Developing effective and scalable restoration techniques in the marine environment is recognised as difficult (Tillin *et al*. 2022b). Many methods that work on a small scale may not be feasible or effective on a larger scale. Irreplaceable biotopes that have evolved in a distinctive environmental setting that is not replicated elsewhere would be challenging to restore as it is cost prohibitive and unfeasible to re-create that environmental setting in another location.

3.1 Which biotopes are irreplaceable?

In general, biotopes that are found in the CBICS Level 3 Habitat Complex, defined by substratum, depth, and energy, that typically exhibit many irreplaceable at CBICS Level 4 to 6 biotopes include:

- Moderate and low energy supralittoral rock biotopes (e.g. characterised with rare lichen communities).
- High and moderate energy infralittoral rock biotopes (e.g. characterised with species of Macrocystis and Amphibolis).
- Tide swept channels of circalittoral rock biotopes (e.g. biotopes associated with Port Phillip Bay Entrance Canyon, Crawfish Rock and Corinella Circalittoral Reef).
- Sublittoral rhodolith bed biotopes. Rhodoliths are agglomerations of coralline algae forming nodules of various morphological types (Harvey et al. 2008, Harvey et al. 2016). Rhodolith beds create biogenic habitat that enhances biodiversity compared to surrounding sediment beds and are major producers and sinks of calcium carbonate. Rhodolith beds can occupy vast areas around the world and in Australia (Harvey et al. 2016). They are likely to play an important role in carbon cycles, carbon sinks into sediments and are susceptible to ocean acidification.
- Sublittoral sediment seagrass biotopes. Presently, there is no evidence that Heterozostera/ Zostera spp. seagrass beds in Victoria can be restored at scale, although research efforts to redress this are in progress (e.g. Tan et al., 2023). Posidonia australis recovers very slowly from disturbance. It is long-lived, slow growing species only found in the marine waters of Corner Inlet and Nooramunga in Gippsland. Historic projects that have attempted to restore this seagrass species have been unsuccessful.

3.2 Which biotopes are not deemed irreplaceable?

Biotopes that are not considered irreplaceable include many intertidal sedimentary habitats that recover quickly from disturbances, are widespread, and are characterized by common species. Subtidal sedimentary biotopes are similar but are not as easy to restore and/or may take a longer period to recover. Whilst saltmarsh and mangrove biotopes have slow recovery rates, they are the most feasible marine biotopes to restore with high success rates reported globally (Danovaro *et al*., 2025).

Figure 1: Biotope ba3.15: High energy Macrocystis overstorey communities (Macrocystis pyrifera). Image taken early 1990s prior to this biotope's significant decline in Victoria

Credit: Bill Boyle.

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4. Inventory of Category 1 (statutory protected) and Category 2 (not statutory protected) irreplaceable marine biotopes

An Inventory of irreplaceable marine biotopes was produced by applying the above criteria to survey records in the CoastKit Biotope Atlas in June 2024. The Biotope Atlas includes CBICS classified records from major ecological field studies throughout Victoria, particularly from field imaging studies and long-term monitoring data. Although the Biotope Atlas is comprehensive, it does not completely encompass all areas and biotopes. Some historical data are still being processed and there are areas of Victoria yet to be surveyed. The present inventory of irreplaceable biotopes provides a good representation at broader scales and commonly investigated habitats. The inventory will be added to as biotopes of less commonly investigated areas are discovered, described and catalogued.

4.1 Littoral Rock

Table 4: Category 1 and 2 Irreplaceable biotopes under Littoral Rock CBICS level

Biotope Code	CBICS Level	Title	Statutory	Category	Sub-Category	Category description	Subcategory description
ba1	**2**	**Littoral Rock**	Habitats of bedrock, boulders and cobbles which occur in the intertidal zone (the area of the shore between high and low tides) and the splash zone. The upper limit is marked by the top of the lichen, supralittoral zone and the lower limit by the lowest astronomical tide (LAT), sublittoral fringe. Biotopes are grouped according to energy level and zonation of biogenic structural types.				
ba1.1	3	High energy littoral rock	Extremely exposed to exposed shores of bedrock, boulder, cobble and artificial hard substrata. Shores exposed to breaking swell waves.				
ba1.11	4	Supralittoral zone - high energy	Spray zone between coastal vegetation and the supralittoral fringe. Located above the high tide line. Regularly splashed by waves but not submerged by marine water. Includes bare rock, lichens and rock-dwelling samphires and other saltmarsh plants.				
			No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba1.2	3	Moderate energy littoral rock	Moderately exposed shores (bedrock, boulders and cobbles) and other hard substrata. Includes shores that are exposed to swell surge and low swell waves but not directly exposed to breaking swell waves. May have strong tidal stream influence				
ba1.21	4	Supralittoral zone - moderate energy	Spray zone between coastal vegetation and the Supralittoral littorinid fringe. Includes bare rock, lichens and rock-dwelling samphires and other saltmarsh plants.				
			No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba1.212	5	Supralittoral lichen - Tasmanian brilliant orange - moderate energy	Occurs as a prominent band on Tasmanian coast. Often the highest band. Common along northern Tasmania.				
			Yes	1	1B	Irreplaceable - Statutory Protected	Not rare

ba1.3	3	Low energy littoral rock	Sheltered to ultra sheltered rocky shores with very weak to weak tidal streams. Includes bedrock, boulders, cobble and other hard substrata.				
ba1.31	4	Supralittoral zone - low energy	Spray zone between coastal vegetation and the Supralittoral littorinid fringe. Includes bare rock, lichens and rock-dwelling samphires and other saltmarsh plants.				
			No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba1.313	5	Williamstown orange supralittoral lichen	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba1.314	5	Portarlington supralittoral lichen community	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba1.315	5	Schnapper Point yellow supralittoral lichen community	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution

4.2 Littoral Sediment

Table 5: Category 1 and 2 Irreplaceable biotopes under Littoral Sediment CBICS level

Biotope Code	CBICS Level	Title	Statutory	Category	Sub-Category	Category description	Subcategory description
ba2	**2**	**Littoral sediment**	Littoral sediment includes habitats of shingle (mobile cobbles and pebbles), gravel, sand and mud or any combination of these which occur in the intertidal zone. Littoral sediment is defined further using descriptions of particle sizes mainly gravel (16-4 mm), coarse sand (4-1 mm), medium sand (1-0.25 mm), fine sand (0.25-0.063 mm) and mud (less than 0.063 mm) and various admixtures of these (and coarser) grades muddy sand, sandy mud and mixed sediment (cobbles, gravel, sand and mud together). Littoral sediments support communities tolerant to some degree of drainage at low tide and often subject to variation in air temperature and reduced salinity in estuarine situations. Very coarse sediments tend to support few macrofaunal species because these sediments tend to be mobile and subject to a high degree of drying when exposed at low tide. Finer sediments tend to be more stable and retain some water between high tides, and therefore support a greater diversity of species. Medium and fine sand shores usually support a range of oligochaetes, polychaetes, and burrowing crustaceans, and even more stable muddy sand shores also support a range of bivalves. Very fine and cohesive sediment (mud) tends to have a lower species diversity, because oxygen cannot penetrate far below the sediment surface. A black, anoxic layer of sediment develops under these circumstances, which may extend to the sediment surface and in which few species can survive. Some intertidal sediments are dominated by angiosperms, e.g. eelgrass beds on the mid and upper shore of muddy sand flats, or saltmarshes which develop on the extreme upper shore of sheltered fine sediment flats.				
ba2.5	3	Littoral seagrass beds	Found in sheltered, low-energy environments such as estuaries, lagoons, and bays. These habitats are characterized by the presence of seagrass species like Zostera muelleri, and Heterozostera nigricaulis, which form dense underwater meadows on muddy or sandy substrates. These seagrass beds are typically located in the mid to upper intertidal zones, where they remain submerged during high tides and are exposed during low tides.				
ba2.51	4	Seagrass meadow on littoral sediments	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare

ba2.511	5	Zostera muelleri subsp muelleri on littoral sediments	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba2.5111	6	Zostera muelleri subsp muelleri canopy form on littoral muddy sand	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba2.5112	6	Zostera muelleri subsp muelleri and Lepilaena marina	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba2.5113	6	Zostera muelleri subsp muelleri (Turf form)	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba2.512	5	Zostera muelleri (Estuarine robust form)	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare

4.3 Infralittoral Rock

Table 6: Category 1 and 2 Irreplaceable biotopes under Infralittoral Rock CBICS level

Biotope Code	CBICS Level	Title	Statutory	Category	Sub-Category	Category Title	Category Description
ba3	**2**	**Infralittoral rock**	Habitats composed of bedrock, boulders, and cobbles found in the shallow subtidal zone. These habitats typically support seaweed communities. The upper limit of infralittoral rock is marked by the top of the kelp zone, while the lower limit is defined by the lower extent of kelp growth or dense seaweed growth where light can penetrate the water column.				
ba3.1	3	High energy infralittoral rock	Directly subject to oceanic swell and either have an aspect directly facing the prevailing swell direction or be subject to swells by refraction around headlands. The shores of these high energy regions are regularly subject to substantial breaking swell waves and adjacent sublittoral habitats have substantial ground surge. High wave energy habitats are typified by the presence of structural canopy seaweeds such as Phyllospora comosa, Durvillaea potatorum, Ecklonia radiata, Macrocystis pyrifera, and sub-canopy seaweeds Carpoglossum confluens, Cystophora spp.,Acrocarpia spp., Perithalia cordata, Seirococcus axillaris and the seagrass Amphibolos antarctica.				
ba3.11	4	High energy Durvillaea communities	Durvillaea dominated communities, usually associated with highly scoured substrata colonised by crustose coralline algae or intertidal biota if occurring in the swash zone.				
			Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.111	5	Durvillaea potatorum on exposed sublittoral fringe bedrock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1111	6	Durvillaea potatorum and coralline crusts on very exposed sublittoral fringe bedrock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.112	5	Durvillaea potatorum on subtidal bedrock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare

ba3.1121	6	Durvillaea potatorum monospecific stands with crustose coralline algae on highly exposed subtidal bedrock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.113	5	Durvillaea with Phyllospora comosa on highly exposed subtidal bedrock	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.114	5	Complex of Durvillaea, Phyllospora and Ecklonia	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1141	6	Twofold Shelf Durvillaea, Phyllospora, and Ecklonia complex	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.115	5	Durvillaea amatheiae on subtidal bedrock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.116	5	Durvillaea amatheiae complex with Phyllospora comosa on subtidal bedrock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.117	5	Durvillaea potatorum complex with Phyllospora comosa and Cystophora moniliformis	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.118	5	Durvillaea potatorum complex with Phyllospora comosa and Macrocystis pyrifera	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.12	4	High energy Phyllospora communities	Phyllospora dominated communities, often associated with highly scoured substrata colonised by crustose coralline algae and with low to moderate abundance of thallose algal understorey species.				
			Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.121	5	Phyllospora comosa forest with coralline crusts and cushion fauna (sponges and ascidians) on exposed subtidal bedrock	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.1211	6	Dense Phyllospora comosa forest with coralline crusts and cushion fauna (sponges and ascidians) and grazed patches on subtidal bedrock	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.1212	6	Dense Phyllospora comosa forest with cushion fauna (sponges and ascidians) very low cover of crustose coralline algae	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution

ba3.122	5	Phyllospora comosa forest with coralline crusts and/or thallose red algae	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1221	6	Phyllospora comosa forest and understorey of coralline crusts	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1222	6	Phyllospora comosa forest and understorey with erect coralline algae	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare.
ba3.1223	6	Phyllospora comosa forest with canopy sub-component of Ecklonia radiata and understorey of coralline crusts and thallose red algae	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1224	6	Phyllospora comosa forest with coralline crusts, Jania rosea and presence of Perithalia caudata	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1225	6	Open Phyllospora comosa stands with Cystophora moniliformis, Acrocarpia paniculata and Amphiroa anceps	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1226	6	Open Phyllospora comosa stands with patches of erect coralline algae, crustose coralline algae and fleshy red algae	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1227	6	Phyllospora comosa forest with low cover of Acrocarpia paniculata	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1228	6	Phyllospora comosa forest with low cover of Acrocarpia paniculata present and moderate cover of erect coralline algae	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1229	6	Phyllospora comosa and moderate cover of Acrocarpia paniculata stands and erect coralline algae	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.122a	6	Phyllospora comosa and moderate cover of Acrocarpia paniculata stands and erect coralline algae with Delisea pulchra	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.122b	6	Phyllospora comosa forest with canopy sub-component of Seirococcus axillaris	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare

ba3.122c	6	Phyllospora comosa dominated forest with prominent thallose red algae but low cover of crustose coralline algae	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.122d	6	Phyllospora comosa stands with Metagoniolithon radiatum and presence of Acrocarpia paniculata	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.122e	6	Phyllospora comosa stands with Amphiroa anceps and presence of Acrocarpia	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.122f	6	Phyllospora comosa stands with arborescent bryozoans and fleshy thallose red algae	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.122g	6	Open Phyllospora comosa stands with fleshy thallose red algae and minor Cystophora platylobium component	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.122h	6	Open Phyllospora comosa stands with prominent fleshy thallose red algae	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.122i	6	Open Phyllospora comosa stands with erect coralline algae	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.122k	6	Phyllospora comosa stands with crustose coralline, erect coralline and fleshy red algae	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.122m	6	Phyllospora comosa urchin grazing recovery mosaic	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.123	5	Complex of Phyllospora comosa stands with open areas of sub-canopy browns	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1231	6	Phyllospora comosa with Acrocarpia and Cystophora	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1232	6	Phyllospora comosa with Acrocarpia, Cystophora and Macrocystis	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.1233	6	Phyllospora comosa with Perithalia caudata	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare

ba3.124	5	Complex of Phyllospora comosa stands with open sandy hollows or sandy veneer reef	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1241	6	Phyllospora and sandy hollow complex	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.125	5	Phyllospora with dieback	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.126	5	Complex of Phyllospora comosa and Macrocystis pyrifera	No	2	1A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.127	5	Complex of Phyllospora comosa with Acrocarpia paniculata and erect coralline algae	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1271	6	Phyllospora comosa stands with low to moderate cover of Acrocarpia paniculata present and moderate cover of erect coralline algae	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1272	6	Phyllospora comosa and moderate cover of Acrocarpia paniculata stands and erect coralline algae (shaded)	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1273	6	Phyllospora comosa and moderate cover of Acrocarpia paniculata stands and erect coralline algae with Delisea pulchra and other eastern species	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1274	6	Low cover Phyllospora comosa assemblage with Acrocarpia paniculata and erect coralline algae	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.128	5	Twofold Shelf Phyllospora canopy with upwelling assemblage	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.1281	6	Twofold Shelf Phyllospora upwelling assemblage with Cystophora moniliformis	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.1282	6	Twofold Shelf Phyllospora upwelling assemblage (no Cystophora)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.1283	6	Twofold Shelf Phyllospora upwelling assemblage with Durvillaea	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution

ba3.129	5	Complex of Phyllospora comosa stands, Centrostephanus grazed barrens and smaller thallose seaweeds	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.12a	5	Complex of Phyllospora comosa with Acrocarpia paniculata and thallose red algae	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.12b	5	Complex of Phyllospora comosa with Cystophora moniliformis	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.13	4	High energy Ecklonia-Phyllospora communities	Mixed Ecklonia radiata and Phyllospora comosa dominated communities where both species have an appreciable proportion of the canopy structure, but varying in relative dominance. Occurs in less than extremely exposed conditions. Often associated with sand-affected reef and behind surf breaks. Note: Ecklonia radiata may be a minor component in the Phyllospora biotope complex.				
			Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.131	5	Ecklonia radiata and Phyllospora comosa with Seirococcus axillaris and fucoids on exposed subtidal rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.132	5	Low canopy cover mixed Ecklonia radiata and Phyllospora comosa with Seirococcus axillaris on exposed subtidal rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.133	5	Ecklonia radiata and Phyllospora comosa on exposed subtidal rock, thallose red algae abundant	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1331	6	Open canopy of Ecklonia and Phyllospora with Caulerpa obscura	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.134	5	Ecklonia radiata and Phyllospora comosa on exposed subtidal rock with low abundance of thallose red algae	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.135	5	Low canopy cover Cystophora with mixed Ecklonia radiata and Phyllospora comosa on exposed subtidal rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.136	5	Ecklonia radiata and Phyllospora comosa with filter feeders on exposed subtidal rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.137	5	Ecklonia radiata canopy with Phyllospora comosa and Macrocystis pyrifera	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution

ba3.138	5	Ecklonia radiata and Phyllospora comosa canopy with Macrocystis pyrifera and Perithalia caudata	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.139	5	Phyllospora comosa dominated assemblage with Ecklonia radiata in hollows	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.13a	5	Ecklonia radiata dominated canopy with Phyllospora comosa on exposed subtidal rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.13b	5	Phyllospora comosa and Ecklonia radiata with Cystophora platylobium on exposed subtidal rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.13c	5	Phyllospora comosa and Ecklonia radiata with Acrocarpia paniculata on exposed subtidal rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.13d	5	Complex of Ecklonia radiata and Phyllospora with sandy veneer patches	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.13e	5	Complex of Ecklonia radiata and Phyllospora with gravel sediment	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.13f	5	Ecklonia radiata and Phyllospora comosa with Perithalia caudata and fucoids on exposed subtidal rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.13g	5	Ecklonia radiata and Phyllospora comosa with Seirococcus axillaris and crustose coralline algae on exposed subtidal rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.13h	5	Ecklonia radiata and Phyllospora comosa with Twofold Shelf upwelling assemblage	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.13i	5	Ecklonia radiata and Phyllospora comosa with semi-exposed Phyllotricha species	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.13k	5	Ecklonia radiata and Phyllospora comosa with Centrostephanus grazed patches in the Twofold Shelf upwelling setting	No	2	2A	Irreplaceable - Not Statutory Protected	Not rare
ba3.13l	5	Ecklonia and Phyllospora with dieback	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare

ba3.14	4	High energy Ecklonia communities	Dominated by the brown kelp Ecklonia radiata which forms extensive underwater kelp forests with a variety of understory species. Typically found in areas with strong wave action and currents, such as exposed coastal reefs and rocky outcrops.				
			Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.141	5	Ecklonia radiata forest with a faunal cushion (sponges and ascidians) on very exposed subtidal rock	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.1411	6	Ecklonia radiata forest with a faunal cushion (sponges and ascidians) and foliose red seaweeds on exposed subtidal rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1412	6	Ecklonia radiata forest with a faunal cushion (sponges and ascidians) and crinoid and sabellid worm filter feeders on exposed subtidal rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.142	5	Tide-swept Ecklonia radiata (long-stipe morph)	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1421	6	Tide-swept Ecklonia radiata (long-stipe morph) with sparse understorey biota on exposed upper subtidal rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1422	6	Intermediate to deep infralittoral tide-swept Ecklonia radiata (long-stipe morph) with sparse understorey biota on exposed lower subtidal rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.143	5	Ecklonia radiata with abundant foliose red seaweeds on high energy rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1431	6	Ecklonia radiata forest with dense foliose red seaweeds on high energy upper infralittoral rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1432	6	Ecklonia radiata park with dense foliose red seaweeds on exposed lower subtidal rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1433	6	Ecklonia radiata dominated forest (> 50 % cover) with Phyllospora comosa on high energy rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare

ba3.1434	6	Ecklonia with subcomponents of Phyllospora, Seirococcus and Acrocarpia	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1435	6	Ecklonia with abundant foliose red seaweeds and Caulerpa obscura	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.144	5	Ecklonia radiata with crustose coralline algae and sparse foliose red seaweeds on exposed infralittoral rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1441	6	Ecklonia radiata canopy with crustose coralline algae on high energy rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1442	6	Ecklonia radiata with Perithalia caudata on reef tops on high energy rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.145	5	Ecklonia radiata with Macrocystis pyrifera on high energy rock	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.1451	6	Open Ecklonia radiata canopy with Macrocystis pyrifera and Perithalia caudata and foliose red algae	Yes	1	1A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.1452	6	Ecklonia radiata, crustose coralline algae and Macrocystis pyrifera on high energy rock	Yes	1	1A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.146	5	Ecklonia radiata with sub-canopy browns on high energy rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1461	6	Ecklonia, Seirococcus, Acrocarpia and thallose red algae on high energy rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1462	6	Ecklonia radiata, Acrocarpia paniculata and foliose red algae on high energy rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1463	6	Open Ecklonia radiata canopy (kelp park) with Cystophora platylobium and foliose red algae on high energy rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1464	6	Sparse Ecklonia radiata with Perithalia caudata and Cystophora moniliformis - foliose red algae abundant - on high energy rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare

ba3.1465	6	Open Ecklonia radiata canopy with Cystophora platylobium, C retorta and foliose red algae on high energy rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1466	6	Open Ecklonia radiata canopy with Cystophora platylobium, C moniliformis and foliose red algae on high energy rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1467	6	Open Ecklonia radiata canopy with Cystophora retorta and Carpoglossum confluens and foliose red algae on high energy rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1468	6	Ecklonia, Cystophora moniliformis and crustose coralline algae on high energy rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1469	6	Ecklonia radiata with Cystophora moniliformis on high energy rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.147	5	Ecklonia radiata with crustose coralline algae, bushy bryozoans and some thallose red algae	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.148	5	Ecklonia radiata with bushy bryozoans, some thallose red algae and without crustose coralline algae	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.149	5	Deep Ecklonia radiata with bushy bryozoans, Seircoccus and thallose red algae	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.14a	5	Complex of Ecklonia radiata stands and Centrostephanus grazed barrens	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.14b	5	Open Ecklonia radiata stands with thallose red algae and sandy scour	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.15	4	High energy Macrocystis overstorey communities	Dominated by the giant kelp Macrocystis pyrifera, which forms extensive underwater kelp forests with a variety of understory species. Typically found in areas with strong wave action and currents, such as exposed coastal reefs and rocky outcrops.				
			Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.151	5	Macrocystis pyrifera forest with sea surface canopy on high energy rock	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution

ba3.1511	6	Macrocystis pyrifera forest with sea surface canopy on high energy rock with sandy veneer and sand scour assemblages	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.1512	6	Macrocystis pyrifera sea surface overstorey with thallose red algae and Caulerpa trifaria on high energy rock with sandy veneer and sand scour assemblages (Glenelg C)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.152	5	Macrocystis pyrifera stands with a surface canopy on tide swept upper subtidal rock	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.153	5	Macrocystis pyrifera sparse overstorey with non-dominant canopy	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.1531	6	Macrocystis pyrifera sparse overstorey with non-dominant canopy and ascidians	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.16	4	High energy sub-canopy brown seaweed communities					
			Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.161	5	Carpoglossum and Cystophora on exposed rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1611	6	Carpoglossum and Cystophora on sand affected exposed rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1612	6	Carpoglossum confluens and Cystophora retorta, C platylobium and C moniliformis on sand affected exposed rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.162	5	Acrocarpia, Cystophora and erect coralline algae on exposed subtidal rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1621	6	Acrocarpia, Cystophora and erect corallines on exposed subtidal rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1622	6	Cystophora moniliformis with Acrocarpia and erect coralline algae	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare

ba3.1623	6	Macrocystis pyrifera, Acrocarpia, Cystophora and erect coralline algae on exposed subtidal rock	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.163	5	Mixed Cystophora assemblages on exposed rock with sand influence	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1631	6	Mixed Cystophora assemblage with sand influence on high energy rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.164	5	Mixed Cystophora sandy veneer complex with Rhodymenia	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.165	5	Mixed Cystophora, Perithalia and Caulerpa assemblages on moderate to high exposed rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1651	6	Mixed Cystophora, Perithalia, Acrocarpia and Carpoglossum assemblage	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1652	6	Mixed Cystophora, Perithalia and Caulerpa assemblages on moderate to high exposure transition	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.166	5	Acrocarpia and Metagoniolithon radiatum on exposed subtidal rock (no Cystophora)	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1661	6	Acrocarpia and Metagoniolithon radiatum with high cover of Amphiroa anceps	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1662	6	Acrocarpia and Metagoniolithon radiatum with little to no cover of Amphiroa anceps	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.167	5	Seirococcus axillaris and thallose red algae with Acrocarpia paniculata, Perithalia caudata and Cystophora platylobium on high energy infralittoral rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.168	5	Acrocarpia and Perithalia on high energy rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.169	5	Acrocarpia, Cystophora retorta and erect coralline algae on high energy rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare

ba3.16a	5	Cystophora retorta dominated with other sub-canopy brown seaweeds	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.16a1	6	Cystophora retorta assemblage with Macrocystis pyrifera on high energy rock	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.16b	5	Acrocarpia, Seirococcus and Cystophora, excluding C. platylobium	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.16c	5	Low coverage Cystophora assemblage on high energy rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.16d	5	Cystophora moniliformis dominated sub-canopy with smaller thallose brown seaweeds	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.16e	5	Acrocarpia and Amphiroa anceps on high energy rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.16f	5	Acrocarpia with Delisea pulchra and Polyopes constrictus on high energy rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.16g	5	Seirococcus axillaris with Perithalia caudata on high energy rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.16h	5	Seirococcus axillaris with fleshy thallose red algae	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.16i	5	Acrocarpia and mixed thallose red algae	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.16i1	6	Acrocarpia paniculata and thallose red algae with Perithalia caudata and Cystophora platylobium on high energy infralittoral rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.16k	5	Carpoglossum confuens and Cystophora platylobium without C retorta	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.16k1	6	Cystophora platylobium, Carpoglossum confluens, Perithalia cordata and thallose reds	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare

ba3.16k2	6	Cystophora platylobium, Carpoglossum confluens, Sierococcus axilliaris and thallose reds	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.16m	5	Perithalia cordata dominated stands	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.16m1	6	Perithalia cordata dominant with abundant thallose red algae	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.16m2	6	Perithalia cordata stands with thallose red algae and sub-canopy brown algae	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.16m3	6	Perithalia cordata stands with Caulerpa	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.16m4	6	Perithalia cordata dominant with Cystophora subfarcinata	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.16m5	6	Perithalia cordtaya dominant with Ecklonia radiata	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.16n	5	Cystophora subfarcinata dominant	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.16n1	6	Cystophora subfarcinata dominant with Perithalia and Cystophora	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.17	4	High energy sandy veneer and scour turf communities	Seaweed communities on reef with sandy veneer or with considerable trapped sand and subject to scouring.				
			No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.171	5	Heavily scoured and shaded rock with sparse epibiota	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.172	5	Sand reef complex with crustose coralline algae	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.173	5	Sand veneer tufting community of Rhodymenia, Jania and/or Halopteris	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.174	5	Sandy veneer with isolated tufts of non-coralline algae	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare

ba3.175	5	Sandy veneer complex with high abundance of Areschougia congesta	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.176	5	Sandy veneer complex with high abundance of small brown algae	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.177	5	Scour/surge turfing community with Jania rosea, fleshy red algae, crustose coralline algae and trapped sand	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.178	5	Scour/surge turfing community with Amphiroa anceps	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.179	5	Asparagopsis armata seaweed turf with trapped sand	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.17a	5	Upper Infralittoral red algal community on sand or gravel affected reef	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.17b	5	Sandy scour/surge community with Codium duthieae	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.17c	5	Sandy scour/surge community with Cladophora prolifera	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.17d	5	Sandy veneer complex with emergent tall Sargassum plants on high energy infralittoral rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.17e	5	Cystophora moniliformis on sandy scoured infralittoral rock with smaller thallose algae	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.17f	5	Sandy hummocked veneer complex with thallose reds and Sporochnales brown seaweed (Glenelg A)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.17g	5	Diverse small red and brown algae with sandy veneer (Glenelg B)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.17h	5	Sandy veneer thallose reds, Caulerpa and small browns	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.18	4		Characterized by a dense cover of foliose red seaweeds, which thrive on the upper infralittoral zone’s bedrock and boulders.				

		Foliose red seaweeds on upper infralittoral rock - high energy	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.181	5	Foliose red seaweeds on exposed upper subtidal rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1811	6	Vertical walls with erect coralline algae and Callophyllis rangiferina	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1812	6	Sonderophycus coriaceus with small sponges	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1813	6	Plocamium and other foliose red seaweeds on upper infralittoral rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.19	4	Ecklonia radiata park with red algae on lower infralittoral rock - high energy	Characterised by extensive complex stands of Ecklonia radiata termed 'parks' with variety of red algae and sessile invertebrates that occupy reefs in the lower infralittoral zone (excludes Centrostephanus grazed barrens).				
			Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.191	5	Lower infralittoral Macrocystis pyrifera bed - not forming dense overstorey	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.192	5	Ecklonia radiata park dominated overstory	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1921	6	Ecklonia radiata park with dense foliose red seaweeds on exposed lower infralittoral rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1922	6	Ecklonia radiata park with foliose red seaweeds on patchy reef with gravel sediment	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1923	6	Ecklonia radiata park with thallose red algae, crustose coralline algae, sponges and sea tulips	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1924	6	Ecklonia radiata park with sandy veneer, thallose red algae and sponges	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1925	6	Ecklonia radiata park with crustose coralline algae and low abundance of thallose red algae	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare

ba3.1926	6	Ecklonia radiata park with thallose red, erect coralline and small brown seaweeds on exposed lower infralittoral rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1927	6	Ecklonia radiata park with ascidians, sea tulips and thallose red algae	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1928	6	Ecklonia radiata park with grey mounded colonies (Ninety Mile Beach C)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.193	5	High energy lower infralittoral foliose red algal dominated reef	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.194	5	Foliose red algae with sessile invertebrates	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.195	5	Deep Ecklonia bed	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.19b	5	Lower infralittoral arborescent soft coral	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.19c	5	Lower infralittoral patchy rock with long-stipe Ecklonia and sponges	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.19d	5	Lower infralittoral with dominance of Cenolia trichoptera feather stars	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.19d1	6	Thallose red algae with abundant Cenolia trichopteran feather stars (Ninety Mile Beach A)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.19d2	6	Thallose red algae with abundant Cenolia trichopteran feather stars and grey mounded colonies (Ninety Mile Beach B)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.19e	5	Lower infralittoral kelp park with dominance of Cenolia trichoptera feather stars and cushion fauna (Cape Conran A)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.19f	5	Ecklonia radiata park with thallose red, Caulerpa and sparse erect sponges on sandy veneer lower infralittoral rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare

ba3.1b	4	Amphibolis stands on high energy rock	Seagrass Amphibolis antarctica assemblages on exposed rocky reef with sandy veneer. May be mixed with Cystophora species. On lower profile reefs in heavy surge reef and sometimes breaking conditions and with high sand influence.				
			Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1b1	5	Amphibolis stands with high energy sub-canopy browns	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1b2	5	High energy Amphibolis stand with equal component of red algae	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1b3	5	Amphibolis stands with Phyllospora comosa	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.1c	4	High to moderate energy tide-swept Ecklonia-Phyllospora communities	Tide-swept Ecklonia radiata and Phyllospora comosa dominated communities where both species have an appreciable proportion of the canopy structure, but varying in relative dominance. Occurs in upper-moderate to lower-high energy conditions. Often associated with sand-affected reef.				
			No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.1c1	5	Phyllospora comosa dominated bed with Ecklonia on tidal swept and surge affected reef	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.1c2	5	Phyllospora dominant with Ecklonia and crustose coralline algae	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.1c3	5	Phyllospora dominant with Ecklonia and Seirococcus axillaris	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.1c4	5	Ecklonia dominant mixed stand with Phyllospora on tidal swept and surge affected reef	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.1c5	5	Ecklonia dominant with Phyllospora and crustose coralline algae	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.1c6	5	Ecklonia dominant with Phyllospora and mixture of sub-canopy brown seaweeds	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.1c7	5	Ecklonia dominant with Phyllospora and dieback or disease present	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution

ba3.1c8	5	Ecklonia dominant with Phyllospora and beds of juvenile recruits	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.1e	4	High energy erect coralline algal communities	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1e1	5	Amphiroa anceps with other erect coralline and thallose red and brown algae	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1f	4	No prominent structural or identification features	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1g	4	Caulerpa beds on high energy rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1h	4	High energy infralittoral zoanthid wall communities	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1i	4	High energy infralittoral turf complex	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1i1	5	High energy infralittoral turf complex with ascidians	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1k	4	Small thallose brown and red algae on high energy rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1k1	5	Small thallose brown and red algae on high wave surge rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.1k2	5	Small thallose brown algae dominant with thallose red and turfing erect coralline algae, with sparse Macrocystis pyrifera	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.2	3	Moderate energy infralittoral rock	Habitats found on bedrock and stable boulders with moderate wave exposure and moderately strong to weak tidal streams. Ecklonia radiata biotopes in moderate energy environments are composed of stunted growth forms or form dense canopy. Principal subcanopy and understorey components are Cladophora prolifera, Seirococcus axillaris, Cystophora monilifera, Sargassum vestitum, Caulerpa brownii, Caulerpa flexilis and erect coralline algae. The seagrass Amphibolis antarctica is a common indicator of moderate energy rock environments. Stands of Macrocystis pyrifera also occur in moderate energy locations.				
ba3.21	4	Amphibolis antarctica on moderate energy rock with sandy veneer	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.211	5	Amphibolis antarctica monospecific stand on moderate energy rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare

ba3.212	5	Amphibolis antarctica with Zostera nigricaulis mix	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.213	5	Amphibolis with Ecklonia	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.214	5	Amphibolis with Seirococcus	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.215	5	Amphibolis with Cystophora species	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.216	5	Amphibolis with Caulerpa species and other green seaweeds	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.217	5	Amphibolis with various Cystophora and Caulerpa species	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.218	5	Amphibolis with Macrocystis pyrifera	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.219	5	Amphibolis antarctica on tide-swept rhodolith beds	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.21a	5	Amphibolis antarctica with Cystophora pectinata and other sub-canopy brown seaweeds	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.21b	5	Amphibolis antarctica with Cystophora retorta and erect coralline algae	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.22	4	Ecklonia radiata assemblages on moderate energy rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.221	5	Dense Ecklonia radiata canopy with crustose coralline algae, moderate energy	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.2211	6	Stunted Ecklonia radiata with crustose coralline algae, moderate energy	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.222	5	Dense Ecklonia radiata canopy with Cladophora prolifera, moderate energy	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.223	5	Ecklonia radiata and Caulerpa brownii, moderate energy	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare

ba3.224	5	Ecklonia radiata cover with Macrocystis pyrifera, moderate energy	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.225	5	Ecklonia radiata and sub-canopy browns, moderate energy	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.2251	6	Ecklonia radiata and sub-canopy browns, moderate energy, with Seirococcus axillaris, Cystophora monilifera, Sargassum vestitum and erect coralline algae	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.226	5	Ecklonia radiata and Phyllotricha decipiens, moderate energy	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.227	5	Ecklonia radiata with dieback or disease, moderate energy	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.228	5	Ecklonia radiata with recruiting juvenile beds, moderate energy	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.229	5	Ecklonia radiata with Caulerpa obscura and semi-exposed Sargassum species	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.2291	6	Ecklonia with Caulerpa obscura and Seirococcus axillaris	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.2292	6	Ecklonia with Caulerpa obscura (Seirococcus absent)	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.22a	5	Ecklonia radiata with semi-exposed Sargassum species	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.22b	5	Open canopy Ecklonia radiata with high cover of thallose reds, moderate energy	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.23	4	Sub-canopy brown seaweed assemblages on moderate energy rock with sand influence	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.231	5	Mixed Cystophora including Cystophora pectinata on moderately exposed rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare

ba3.2311	6	Silted fucoid communities on moderate energy subtidal rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.232	5	Moderate energy silted reef with sub-canopy browns	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.2321	6	Silted reef with fucoid browns including Acrocarpia paniculata, Carpoglossum confluens and with Sargassum species	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.2322	6	Silted reef with fucoid browns including Acrocarpia paniculata, Saragassum species and Carpoglossum confluens	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.233	5	Seirococcus axillaris dominated assemblage	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.234	5	Phyllotricha decipiens assemblage	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.235	5	Phyllotricha decipiens assemblage with Caulerpa brownii and Caulerpa flexilis	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.236	5	Sargassum spinuligerum and Cladophora prolifera with Cystophora moniliformis and Amphibolis antarctica	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.237	5	Sargassum spinuligerum and Caulocystis on sandy veneer rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba3.238	5	Semi-exposed Phyllotricha and Sargassum species on moderate energy rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba3.26	4	Tide-swept Sargassum mixed brown and red algal assemblage with sandy veneers	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.261	5	Tide swept Sargassum, Caulerpa and red algal assemblage with sponges	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.27	4	Tide-swept lower infralittoral red algal assemblage with sponges	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.271	5	Western Port tide-swept lower infralittoral red algal sponge community	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution

ba3.28	4	Tide-swept Ecklonia and sponge complexes - moderate energy infralittoral rock	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.281	5	Tide-swept Ecklonia with sponge colonies - moderate energy infralittoral rock	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.29	4	Tide-swept invertebrate assemblage on infralittoral rock	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.291	5	Tide-swept ascidian bed on infralittoral rock, interspersed by sand	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.2a	4	Tide-swept seaweed assemblages on rhodolith beds	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.2a1	5	Sargassum Caulocystis and other brown seaweeds on tide-swept rhodolith beds	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba3.2f	4	Macrocystis overstorey on moderate energy rock	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.2f1	5	Macrocystis pyrifera stand with surface overstorey on moderate energy rock	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.2g	4	Lower infralittoral assemblages on moderate energy rock	Lower infralittoral assemblages typified by increased abundances of thallose red algae and sessile invertebrates.				
ba3.2g1	5	Macrocystis pyrifera stand on moderate energy, lower infralittoral sandy rock	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.3	3	Low energy infralittoral rock	Habitats found in the shallow subtidal zone, characterized by bedrock, boulders, and cobbles. These areas are typically sheltered from strong wave action and tidal currents, creating a stable environment for various marine life. Sheltered habitats are defined as have no swell influence and wind fetch generally less than 20 km. Seaweed assemblages here are typified by Sargassum and Caulerpa species where there is some wave movement.				
ba3.36	4	Caulerpa assemblages on low energy rock	Reef Caulerpa mats and assemblages on low energy rock.				
ba3.365	5	Plesiastrea versipora with varying Caulerpa assemblages	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba3.3a	4	Grazed barrens on low energy rock	Grazed barrens on low energy rock				

ba3.3a2	5	Grazed barren with crustose coralline algae and Plesiastrea versipora on low energy rock	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution

4.4 Circalittoral rock (and other hard substrata)

Table 7: Category 1 and 2 Irreplaceable biotopes under Circalittoral rock CBICS level

Biotope Code	CBICS Level	Title	Statutory	Category	Sub-Category	Category Title	Category Description
ba4	**2**	**Circalittoral rock (and other hard substrata)**	Circalittoral rock biotopes are marine habitats found in the deeper subtidal zone, typically below the infralittoral zone, where light penetration is minimal at depths typically 5 to 50 m (but can extend deeper). These biotopes are characterized by hard substrata such as bedrock, boulders, and cobbles. Invertebrate fauna species dominate, in contrast to the algae-dominated communities of the infralittoral zone. The fauna includes a diverse array of species such as sponges, bryozoans, anemones, and various types of corals. The specific composition of these communities can vary greatly depending on factors like wave action, tidal stream strength, salinity, turbidity, and rock topography.				
ba4.1	3	High energy open coast circalittoral rock	This habitat complex occurs on extremely wave-exposed to exposed circalittoral bedrock and boulders subject to tidal streams ranging from strong to very strong.				
ba4.12	4	Sandy moderate profile reef wave surge communities	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba4.121	5	Upper circalittoral sandy veneer community of lamellate and other seabed covering sponges, bushy branching sponges and thallose red algae (Glenelg D)	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba4.13	4	Sandy low-profile reef wave surge communities	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba4.131	5	Upper circalittoral sandy sponge community with palmate and ear sponges (Surf Coast A)	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba4.132	5	Upper and lower circalittoral sandy sponge community with ear sponges and low fine bushy branching sponges (Surf Coast B)	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba4.133	5	Upper circalittoral sandy sponge community with seabed covering and erect laminate sponges and ear sponge (Surf Coast C)	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare

ba4.134	5	Lower circalittoral sandy sponge community with spaced erect flabellate and coarsely branching sponges (Surf Coast D)	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba4.135	5	Lower circalittoral sandy sponge community with fine bushy and purple branching sponges (Surf Coast E)	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba4.136	5	Lower circalittoral sandy veneer sponge community with tall palmate and branching sponges (Surf Coast J)	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba4.137	5	Lower circalittoral sandy veneer sponge community with bushy bryozoans, sea tulips and sparse thick branching and taco sponges (Surf Coast K)	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba4.138	5	Upper circalittoral sandy sponge community with carpets of Ritterella / Cryptopolyzoon colonies (Surf Coast M)	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba4.139	5	Lower circalittoral sandy sponge community with carpets of Ritterella / Cryptopolyzoon colonies (Surf Coast N)	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba4.13a	5	Upper circalittoral sandy sponge community with Pyura spinifera and flabellate sponges (Surf Coast O)	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba4.13b	5	Lower circalittoral sandy sponge community with Pyura spinifera, taco sponge and flabellate sponges (Surf Coast P)	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba4.13c	5	Lower circalittoral sandy sponge community with purple triangle sponge (Surf Coast Q)	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba4.13d	5	Lower circalittoral sandy sponge community with variable abundance of pink flabellate and palmate sponges, red bushy branching sponges and bushy bryozoans (Discovery Bay A)	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba4.13e	5	Lower circalittoral sandy sponge community with prominent erect branching,	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare

		mounded and thickly lamellate sponges and presence of Pteronisis (Discovery Bay B)					
ba4.13f	5	Lower circalittoral sandy veneer sponge community with tall palmate, planar branching and flabellate sponges (Discovery Bay I)	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba4.13g	5	Upper circalittoral sandy veneer community of laminate covering sponges, orange bushy bryozoans and thallose red algae (Cape Otway A)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.13h	5	Lower circalittoral sandy veneer community with Pyura spinifera and abundant and diverse low erect and lamellate-covering sponges (Cape Otway E)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.13i	5	Lower circalittoral sandy veneer community with Pyura spinifera, sea whips and abundant and diverse low erect and lamellate-covering sponges (Cape Otway F)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.13k	5	Lower circalittoral sandy veneer sparse sponge community with tall branching, low seabed erect and yellow mounded sponges (Wilsons Prom S)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.13m	5	Lower circalittoral sandy veneer reef with soft bushy bryozoans and sparse branching seabed erect sponge community (Wilsons Prom T)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.13n	5	Upper circalittoral sandy veneer community with erect branched, mounded, flabellate and lamellate sponges (Bunurong C)	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba4.13o	5	Lower circalittoral sandy veneer sparse sponge community with tall branching, low seabed erect branching, mounded and lamellate sponges (Bunurong D)	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba4.14	4	Bushy bryozoan-dominated communities	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution

ba4.141	5	Lower circalittoral sandy veneer with light brown bushy bryozoan and crustose coralline algae	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba4.142	5	High complexity lower circalittoral reef with yellow bushy bryozoans and red and grey rambling ridged sponges (Discovery Bay E)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.143	5	High complexity lower circalittoral reef with yellow bushy bryozoans, grey rambling ridged sponges and moderate diversity of other seabed covering sponges (Discovery Bay F)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.144	5	High complexity upper circalittoral reef with yellow bushy bryozoans, thallose red algae and sparse sponges (Discovery Bay K)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.145	5	High complexity lower circalittoral reef with yellow bushy bryozoans and sparse sponges (Discovery Bay M)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.15	4	Hard bryozoan-dominated communities	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba4.16	4	Provisional - sea tulip and ascending sponges	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.161	5	Sea tulip and ascending sponge upper circalittoral community on open coast rock (Cape Howe E)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.17	4	Centrostephanus urchin grazed biotopes on circalittoral rock	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba4.171	5	Grazed Centrostephanus urchin barren on circalittoral rock	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba4.172	5	Centrostephanus urchin grazed upper circalittoral rock with Cenolia feather stars	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.18	4	Provisional - southern Wilsons Promontory erect sponge, covering sponges, sea plume complex	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution

ba4.181	5	Moderate complexity lower circalittoral rock with Pteronisis, seawhips and Herdmania ascidians (Wilsons Prom A)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.182	5	Moderate complexity lower circalittoral rock with seawhips, hard bryozoans and low seabed erect sponges (Wilsons Prom B)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.19	4	Upper circalittoral Cenolia feather stars, thallose red algae and sponges	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.191	5	Upper circalittoral grey mounded colonies with Cenolia and branching sponges (Ninety Mile Beach D)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1a	4	Provisional - Mounded sponges with bryozoans (eastern Victoria)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1a1	5	Sparse massive sponge community with bryozoans on open coast lower circalittoral rock (Cape Howe D)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1b	4	Sea whip and tall branching sponge communities on open coast circalittoral rock	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.1b1	5	Sea whip and diverse tall, branched sponge assemblage on patchy lower circalittoral rock (Cape Howe A)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.1b2	5	Sea whip, tall branched and diverse seabed erect sponge assemblage on lower circalittoral rock (Cape Howe B)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1b3	5	Sea whip and diverse seabed erect sponge assemblage on sandy veneer circalittoral rock (Cape Howe C)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.1b4	5	Seawhip, thickly lamellate ear sponges and erect branching sponge community on moderate to high complexity lower circalittoral reef (Discovery Bay N)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1c	4	High energy circalittoral rock with seabed covering sponges	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution

ba4.1c1	5	Moderate to high circalittoral reef complexity with high density of lamellate-angled and ridged covering sponges (Surf Coast F)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1c2	5	Moderate to high circalittoral reef complexity with non-crowded lamellate-angled, ridged and ear sponges (Surf Coast S)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1c3	5	High complexity lower circalittoral rock with yellow bushy bryozoans and high diversity of seabed covering and low erect sponges, including erect red planar branching sponge (Discovery Bay G)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.1c4	5	High complexity upper circalittoral rock with yellow bushy bryozoans, high diversity of seabed covering sponges, orange rambling ridge sponge and sparse Ecklonia (Discovery Bay H)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.1c5	5	Moderate to high complexity upper circalittoral reef with thallose red algae and high density of lamellate and ridged seabed covering sponges (Shipwreck Coast C)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.1c6	5	High density of lamellate covering and erect sponges with seawhips on circalittoral rock (Surf Coast R)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1c7	5	Circalittoral rock with moderate density of lamellate covering and thickly encrusting sponges (Cape Otway B)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1c8	5	High diversity of seabed covering and low erect sponges on circalittoral rock (Cape Otway H)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1c9	5	High complexity circalittoral reef with lobate and mounded seabed covering sponges, soft coral Capnella gaboensis and encrusting organic matrix (Wilsons Prom N)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution

ba4.1ca	5	Upper circalittoral rock with high density of covering with seabed erect sponges (Croajingolong A)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1d	4	Moderate to high complexity circalittoral rock with prominent sea plumes, sea tulips and hydroid fans	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1d1	5	Moderate to high complexity circalittoral rock with Pteronisis, Pyura spinifera, hydroid fans and lamellate sponges (Surf Coast G)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1d2	5	Moderate to high complexity circalittoral rock with Pteronisis, Pyura spinifera, hydroid fans, palmate and ear sponges (Surf Coast H)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1d3	5	Hydroid fans, Pteronisis sea plumes, Pyura spinifera, lamellate sponges and crustose coralline algae on circalittoral rock (Shipwreck Coast G)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.1d4	5	Diverse sponge assemblage including lamellate covering and mounded sponges and with Pyura spinifera and Pteronisis (Cape Otway C)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1d5	5	Sea tulips Pyura spinifera, Pteronisis sea plumes and sea whips with diverse low sponge assemblage (Cape Otway D)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1e	4	Moderate to high complexity circalittoral rock with covering of small colonies and well spaced erect sponges	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1e1	5	Moderate to high complexity circalittoral rock with covering of small colonies and spaced taco and flabellate sponges (Surf Coast L)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1e2	5	Moderate to high complexity circalittoral rock with covering of small colonies and spaced tall dichotomous planar sponges (Cape Nelson A)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution

ba4.1e3	5	Moderate to high complexity upper circalittoral rock with covering of small invertebrate colonies tufting red algae and sparse Ecklonia (Cape Nelson B)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1e4	5	High energy circalittoral low to moderate complexity reef with red thallose forms and diverse seabed erect sponges (Wilsons Prom P)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.1f	4	Low complexity circalittoral rock with non-crowded erect sponges	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1f1	5	Low complexity circalittoral rock with covering of small colonies and varied erect planar sponges (Cape Nelson C)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1f2	5	Low complexity circalittoral rock with covering of encrusting biota and low density of various erect sponges (Cape Nelson D)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1f3	5	Low complexity circalittoral rock with prominent diversity of mounded, cup, branching and flabellate sponges in low abundance (Discovery Bay C)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.1f4	5	Low complexity lower circalittoral reef with sparse abundance of larger sponges (Discovery Bay D)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.1f5	5	Low complexity upper circalittoral reef with thallose red algae low to moderate abundance of larger sponges (Discovery Bay J)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.1f6	5	Low to moderate complexity lower circalittoral reef with a prominence of thickly lamellate, flabellate, knobbly branching, bushy branching sponges (Discovery Bay L)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.1f7	5	Circalittoral rock with bushy bryozoans and low density of lamellate covering and erect sponges (Cape Otway G)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution

ba4.1g	4	Crustose coralline algal communities with combinations of thallose red algae and scattered sponges on high energy circalittoral rock	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1g1	5	Circalittoral rock crustose coralline algae with thallose red algae and scattered low erect sponges (Shipwreck Coast A)	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba4.1g2	5	Predominantly bare circalittoral rock with crustose coralline algae (Shipwreck Coast B)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.1g3	5	Low to moderate complexity circalittoral rock with crustose coralline algae and tall branching sponges (Shipwreck Coast D)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.1g4	5	Low to moderate complexity upper circalittoral rock with crustose coralline algae and seabed covering lamellate sponges (Shipwreck Coast E)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.1g5	5	Low complexity lower circalittoral rock with crustose coralline algae and seabed covering lamellate sponges (Shipwreck Coast F)	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.1h	4	High energy circalittoral rock with bushy branching and low erect sponges	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1h1	5	High energy circalittoral rock with bushy branching and seabed erect sponge community (Wilsons Prom C)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1h2	5	Moderate complexity lower circalittoral rock with bushy branching, seabed erect and large flabellate sponges (Wilsons Prom D)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1h3	5	Moderate complexity lower circalittoral rock with bushy branching seabed erect sponges and large flabellate sponges (Wilsons Prom Q)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1h4	5	High complexity lower circalittoral rock with diverse bushy branching seabed erect sponges (Wilsons Prom R)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution

ba4.1i	4	High energy circalittoral patch reef with bushy and hard bryozoans, sparse sponges and bramble gorgonian Acabaria	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1i1	5	High energy circalittoral patch reef with bushy and hard bryozoans, sparse sponges and bramble gorgonian Acabaria (Wilsons Prom E)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1k	4	Low to high complexity circalittoral rock with prominent sea plumes, sea whips, hydroid fans, hard bryozoans and encrusting sediment-organic matrix	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1k1	5	High energy upper circalittoral, low to moderate complexity reef with hydroid fans, Pteronisis, sea whips, small brown and red algae, ascidians and mounded sponges (Wilsons Prom F)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1k2	5	High energy mid-circalittoral, sloped and moderate complexity reef with hydroid fans, Pteronisis, sea whips, organic matrix and mounded sponges (Wilsons Prom G)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1k3	5	High energy lower circalittoral, sloped and moderate complexity reef with hydroid fans, Pteronisis, sea whips, organic matrix and tall sponges (Wilsons Prom H)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1k4	5	High energy lower circalittoral low to moderate complexity reef with hydroid fans, Pteronisis, sea whips, organic matrix and Acabaria bramble gorgonians (Wilsons Prom I)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1k5	5	High energy lower circalittoral low to moderate complexity reef with hydroid fans, Pteronisis, sea whips, organic matrix and hard bryozoans (Wilsons Prom J)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1k6	5	High energy lower circalittoral high complexity reef with hydroid fans, Pteronisis, sea whips, organic matrix and high diversity of sponges (Wilsons Prom K)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution

ba4.1k7	5	High energy lower circalittoral high complexity reef with hydroid fans, Pteronisis, sea whips, organic matrix and high diversity of sponges (Wilsons Prom L)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1k8	5	High energy lower circalittoral high complexity reef with hydroid fans, Pteronisis, sea whips, organic matrix and high diversity of sponges (Wilsons Prom M)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1k9	5	Wreck SS Gulf of Carpentaria assemblages (Wilsons Prom O)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1m	4	Moderate to high complexity circalittoral rock with dense covering of Herdmania ascidians and few other erect forms	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.1m1	5	Herdmania ascidians with encrusting sponges	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.2	3	Tide-swept channels of circalittoral rock	Tide-swept circalittoral rock are typified as being in tidal channels, at the entrance or within embayments. A key feature is the exposure of rock by scouring of sediments by currents. The reefs are typically bounded by sediments, with reef biota influenced by sediment bed dynamics, high suspended sediment loadings and degrees of sedimentation. The predominant tide-swept circalittoral reef systems are located at Port Phillip Heads, Western Port and Corner Inlet.				
ba4.21	4	Encrusting recolonisation and transitional communities	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.22	4	Sandy tide-swept communities	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.221	5	Entrance Canyon 1	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.222	5	Entrance Canyon 5	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.223	5	Entrance Canyon 10	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.23	4	Red algal-sponge communities	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.231	5	Entrance Canyon 4	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.232	5	Entrance Canyon 7	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution

ba4.24	4	Fan hydroid-sponge communities	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.241	5	Entrance Canyon 6	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.242	5	Entrance Canyon 12	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.243	5	Entrance Canyon 2	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.244	5	Entrance Canyon 3	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.245	5	Entrance Canyon 21	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.246	5	Entrance Canyon 16	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.25	4	Sponge and bushy bryozoan communities	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.251	5	Entrance Canyon 19	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.252	5	Entrance Canyon 20	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.26	4	Vertical wall tide-swept communities	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.261	5	Entrance Canyon 14	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.262	5	Entrance Canyon 23	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.27	4	Deep jewel anemone communities	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.271	5	Entrance Canyon 8	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.272	5	Entrance Canyon 22	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.28	4	Deep hydroid and bryozoan communities	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.281	5	Entrance Canyon 18	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.2a	4	Predominant sponge communities	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.2a1	5	Entrance Canyon 11	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution

ba4.2a2	5	Entrance Canyon 13	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.2a3	5	Entrance Canyon 15	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.2a4	5	Entrance Canyon 17	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.2a5	5	Entrance Canyon 24	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.2a6	5	Entrance Canyon 25	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.2b	4	Moderate energy tide-swept faunal communities	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.2b1	5	Portsea Hole	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.2b2	5	Crawfish Rock	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.2b3	5	Singapore Deep	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba4.2b4	5	Corinella circalittoral reef	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.2b5	5	Eagle Rock	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.2b6	5	Western Port patch reef sponge community A	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.2b7	5	Western Port patch reef sponge community B	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.2b8	5	Western Port high diversity sponge community C	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.2c	4	Communities on shaded, vertical, overhanging or caverns of tide-channel circalittoral rock	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba4.4	3	Low energy circalittoral rock	Biota on wave-sheltered bedrock and boulders with weak or very weak tidal streams in the circalittoral zone.				
ba4.42	4	Shallow temperate coral communities on low energy rock	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution

ba4.421	5	Erythropodium hicksoni and Plesiastrea versipora on shallow low energy reef	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution

4.5 Sublittoral sediments

Table 8: Category 1 and 2 Irreplaceable biotopes under Sublittoral sediments CBICS level

Biotope Code	CBICS Level	Title	Statutory	Category	Sub-Category	Category Title	Category Description
ba5	**2**	**Sublittoral sediments**	The sublittoral sediment habitat combines infralittoral and circalittoral depth zones, and full range of wave exposures, following the JNCC-EUNIS schema. Sediments are characterised by grain size/texture (coarse, sand, mud and mixed) and epibiota such as rhodoliths, biogenic reef (sponges, bryozoans, ascidians and oysters); seaweeds (including sediment *Caulerpa spp.* beds); seagrass beds; clumped sessile biota; and seabed aggregations (octocorals, scallops or seapens).				
ba5.5	3	Sublittoral rhodolith beds	Rhodoliths are agglomerations of coralline algae forming nodules of various morphological types. Rhodolith beds create biogenic habitat that enhances biodiversity compared to surrounding sediment beds and are major producers and sinks of calcium carbonate.				
ba5.51	4	Rhodolith beds in subtidal clean gravel or sand on open coasts	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.511	5	Circalittoral rhodolith bed with Caulerpa trifaria	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba5.512	5	Circalittoral open coast rhodolith bed with thallose red algae	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba5.5121	6	Circalittoral open coast rhodolith bed with thallose red algae (Bunurong A)	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba5.513	5	Circalittoral rhodolith bed with sponges	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba5.5131	6	Circalittoral rhodolith bed with erect sponges (Bunurong B)	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba5.52	4	Rhodolith beds in tide-swept sheltered channels	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba5.521	5	Concentric compact rhodoliths in tide-swept sheltered habitat	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution

ba5.6	3	Sublittoral biogenic reefs	Dense communities of epibiota found associated with a range of sediment types from exposed open coasts to estuaries, marine inlets and deeper offshore habitats. Typically formed by mussels, oysters, worm casts, bryozoans, ascidians and sponges.				
ba5.63	4	Deep / cold coral reef on sediment	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba5.65	4	Sublittoral oyster reef on sediment	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba5.66	4	Sublittoral bryozoan reef on sediment	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba5.67	4	Sublittoral sponge clump reefs on sediment	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba5.671	5	Deep sponge clump and seawhip community on shell gravel and mud (Cape Howe F)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba5.7	3	Sublittoral seaweed on sediment	Bed forming brown-red-green algae communities typically in sheltered waters. Species of the genus *Caulerpa* often form seaweed beds and are a common feature of northwestern and western Port Phillip Bay, Western Port, and at some open coast sites. In Port Phillip Bay, *Caulerpa remotifolia, C. longifolia*, and *C. geminata* are the main species forming beds on sediments. Elsewhere in Victoria, *C. cactoides*, *C.remotifolia*, *C. brownii*, C. *scalpelliformis*, *C. trifaria* and possible *C. taxifolia* are also bed-forming.				
Ba5.71	4	Caulerpa beds on sediment	Beds of the green seaweed from the genus Caulerpa.				
ba5.71b	5	Caulerpa trifaria patches on upper circalittoral mixed and coarse sediments	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba5.73	4	Mixture of brown, red and green algae with sponges	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba5.731	5	Mixed brown, red and green algae bed on sand with sparse interspersed sponges	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba5.732	5	Sponges on sand with relatively sparse interspersed mixed brown, red and green algae	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba5.8	3	Sublittoral seagrass beds	Seagrass beds comprising monospecific seagrass species, or mixed seagrass species beds, or mixed seagrass with seaweeds and/or other biota. Different seagrass species area adapted to depth ranges and energy regimes.				
ba5.82	4	Halophila beds	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba5.821	5	Halophila australis bed	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare

ba5.8211	6	Halophila australis sparse	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.8212	6	Halophila australis medium	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.8213	6	Halophila australis dense	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.8214	6	Halophila australis with abundant drift algae and or epiphytes	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba5.822	5	Halophila australis on tide-swept rhodolith beds	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba5.83	4	Zostera, Heterozostera and Ruppia beds	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.831	5	Heterozostera nigricaulis bed	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.8311	6	Heterozostera nigricaulis low to sparse	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.8312	6	Heterozostera nigricaulis medium	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.8313	6	Heterozostera nigricaulis dense	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.8314	6	Heterozostera nigricaulis with abundant drift algae and or epiphytes	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.8315	6	Heterozostera nigricaulis recent senescence	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.8316	6	Heterozostera nigricaulis with Ectocarpales	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.8317	6	Heterozostera nigricaulis with low to sparse canopy	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.8318	6	Heterozostera nigricaulis bed 0-2 m depth	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.8319	6	Heterozostera nigricaulis bed 2-5 m depth	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.832	5	Heterozostera nigricaulis and Caulerpa mix	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.8321	6	Heterozostera nigricaulis and Caulerpa mix sparse	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare

ba5.8322	6	Heterozostera nigricaulis and Caulerpa mix medium	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.8323	6	Heterozostera nigricaulis and Caulerpa cactoides	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.833	5	Heterozostera nigricaulis with Halophila australis	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.8331	6	Heterozostera nigricaulis with Halophila australis sparse	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.8332	6	Heterozostera nigricaulis with Halophila australis medium	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.8333	6	Heterozostera nigricaulis with Halophila australis dense	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.835	5	Zostera spp. with Ruppia	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.836	5	Heterozostera tasmanica	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.837	5	Zostera muelleri	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba5.8371	6	Zostera muelleri with Hypnea mats	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba5.838	5	Zostera muelleri with Lepilaena marina	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba5.839	5	Zostera muelleri (Coastal lagoon form)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba5.83a	5	Ruppia stands	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba5.83a1	6	Ruppia stands with Hypnea mat	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba5.83a2	6	Ruppia stands with Cladophora	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba5.83a3	6	Ruppia stands with Gracilaria	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba5.83a4	6	Ruppia stands with Lamprothamnion	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba5.83a5	6	Ruppia stands with Stuckenia	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare

ba5.83b	5	Heterozostera nigricaulis on rhodolith bed	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba5.83c	5	Zostera muelleri with Stuckenia	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba5.84	4	Posidonia beds	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba5.841	5	Posidonia australis	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba5.842	5	Posidonia australis with Zostera nigricaulis	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba5.843	5	Posidonia australis with Halophila australis	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba5.844	5	Posidonia australis with Zostera nigricaulis and Halophila australis	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba5.9	3	Non-reef sediment epibenthos	Mixed sublittoral sediments with a substantial cover of epibenthic biota that are not biogenic reef forming, including scallop beds, seapen beds and low densities of Pyura and other ascidians.				
ba5.94	4	Lamp shell (brachiopod) beds on sublittoral sediment	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba5.941	5	Brachiopod Magellania flavescens beds on sublittoral sediment	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba5.95	4	Seapen bed on sublittoral sediment	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba5.951	5	Virgularia mirabilis beds on sublittoral sediment	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba5.952	5	Sarcoptilus grandis beds on sublittoral sediment	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba5.953	5	Orange seapen on sublittoral sediment	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba5.96	4	Sponge clumps (non-reef) on sublittoral sediment	Yes	1	1A	Irreplaceable - Statutory Protected	Rare or restricted distribution
ba5.961	5	Sponge clumps with erect alcyonarians	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution

ba5.962	5	Isolated palmate, flabellate and laminate sponges with tufts of red algae on high energy upper circalittoral fine sand	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba5.963	5		No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba5.964	5	Sediment channel sponge clumps with tube colonies (Corner Inlet A)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba5.98	4	Sessile invertebrate clumps on circalittoral biogenic gravel	No	2	2B	Irreplaceable - Not Statutory Protected	Not rare
ba5.981	5	Sponge and Pyura spinifera colonies on circalittoral biogenic gravel	Yes	1	1B	Irreplaceable - Statutory Protected	Not rare
ba5.9b	4	Tube colony mounds on sublittoral sediment channels	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba5.9b1	5	Tube colony mounds on sublittoral sediment channels (Corner Inlet B)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution
ba5.9b2	5	Tube colony mounds on sublittoral sediment channels with doughboy scallops (Corner Inlet C)	No	2	2A	Irreplaceable - Not Statutory Protected	Rare or restricted distribution

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