



## ***Rimstone pools and cave structures formed by microbial activity on marine shorelines (Augusta microbialites)***

### **TEC Description**

The community occurs along the south-west coast near Augusta and comprises microbialites, which are structures produced through the growth and metabolic activity of benthic microbial communities. The tufa that comprise the community are microbialite structures that have a less defined internal framework. They are precipitated from freshwater springs and seeps and formed through the growth and metabolic activity of a diverse variety of microbial organisms, including cyanobacteria, diatoms and other algal components. They form chemical sedimentary rock composed of calcium carbonate. These tufa have many forms including drapes, curtains, small cylindrical stalactites and larger campanulate (bell-shaped) masses on the sea cliffs, as well as fans or terraces consisting of a series of rimstone pools and nodular masses in small brackish pools.



### **Distribution**

This community is confined to rocky shoreline and adjacent cliffs and caves, within Ngari Capes Marine Park, and Leeuwin Naturaliste and Cape Naturalist National Parks, from Cape Naturaliste to Augusta and possibly Black Point.

Department of Biodiversity, Conservation and Attractions (DBCA) Regions: South West, Warren

DBCA Districts: Busselton, Pemberton

Local Government Authorities: City of Busselton and Shire of Augusta- Margaret River, Manjimup

### **Habitat Requirements**

The growth of the community is dependent upon a supply of freshwater from springs and seeps.

### **Indigenous Interests**

An Aboriginal Sites Register is kept by the Department of Indigenous Affairs. According to the Register, there are no significant sites within the vicinity the community. Traditional owner group: Wadani.

## Conservation Status

Listed as endangered under WA Minister Environmentally Sensitive Areas list in policy.

## Threatening Processes

The major threats to the community are altered water quality or groundwater decline and destruction by crushing of rimstone pools and tufa formations due to physical disturbance.

## Recovery Plan

An interim recovery plan is recommended for this community. High priority actions include survey and mapping of potential new occurrences and determining the growth habits and ecological water requirements for tufa. Other recommended actions include seasonal analysis of microbial samples to determine the biological composition of the various occurrences throughout the year and seeking to understand the mineral and elemental components of the tufa formations.

## Citation

Department of Biodiversity, Conservation and Attractions. (2020). Recovery plans and interim recovery plans <https://www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/wa-s-threatened-ecological-communities>.

## Key References

Forbes, M., Vogwill, R., and Onton, K. (2010). A characterization of the coastal tufa deposits of south-west Western Australia. *Sedimentary Geology*. 232: 52-65.

Moore, L.S., (1993). The Modern Microbialites of Lake Clifton, Southwestern Australia. Unpublished PhD Thesis. University of Western Australia.

Onton, K., Clarke, V., and Harding, C. (2009) Monitoring Protocol. Augusta Microbial Threatened Ecological Community. Version 1.0 (August 2009). Prepared for Significant Native Species and Ecological Communities – Resource Condition Monitoring Project, Department of Environment and Conservation, Western Australia.

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