Edition 2 *From Forest to Fjaeldmark*

The Vegetation Communities

Other natural environments

Lichen lithosere

Other natural environments

General description

Lichen lithosere (**ORO**), Sand, mud (**OSM**), and Water, sea (**OAQ**) are the mapping units in this group.

Lichen lithosere (**ORO**) is important for undisturbed cryptogamic communities, such as on blockstreams, cliffs, talus and scree slopes and exposed bedrock on mountain tops and ridges.

Sand, mud (**OSM**) is bare of vegetation, has been used for mapping beaches, sand dune systems, and mobile sand sheets such as those at Waterhouse in north-east Tasmania or at Sandy Cape on the west coast.

Water, sea (**OAQ**) has been used to designate areas of sea, artificial impoundments such as Lake Gordon, Lake Saint Clair and Lake Pedder, as well as deep water in natural lakes. However, shallow waters in natural lagoons and wetlands are assigned to communities within the section *Saltmarsh and wetland*.

General management issues

There has been little botanical exploration of the cryptogamic flora in the Lichen lithosere (**ORO**) mapping unit, except on some mountain tops in south-western Tasmania. Any quarrying, removal of surface boulders and other disturbances of the surface layer of rocks needs to be preceded by a reconnaissance of the microflora and consideration of conservation measures. Slope grooming for ski field development has impacted on lichen fields (Kantvilas 1995, 2000).

References and further reading

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Pinkard, G.J. (1980) *Land systems of Tasmania region 4*. Tasmanian Department of Agriculture, Hobart.

Richley, L.R. (1978) *Land systems of Tasmania region 3*. Tasmanian Department of Agriculture, Hobart.

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Key to Other natural environments

		Page
1	Area comprising water in artificial impoundments, lakes or inlets of the sea (see also ***Saltmarsh and wetland***)	**Water, sea (OAQ) 6**
1	Areas of sand, mudflats and natural rocky areas	
2	Areas of exposed bedrock, either in situ or as detached blocks or boulders; mountain tops	**Lichen lithosere (ORO) 3**
2	Areas of bare sand (usually coastal mobile sand dunes and sand sheets) or tidal mudflats	**Sand, Mud (OSM) 5**

Lichen lithosere (ORO)

General description

These areas may appear as blockfields, scree slopes, cliffs and slabs largely devoid of vascular plants, except occasionally between boulders and in crevices. The rock types underlying this community are mainly quartzite in western Tasmania, dolerite in central and eastern Tasmania, and granite in north-eastern Tasmania. Most of ORO has sometimes-diverse cryptogamic crust. Lichens are the most prevalent life forms, but in wetter areas mosses become more significant and can become dominant.

Little Dog Island. Stephen Harris.

Example locality

Mount Strzelecki, Flinders Island.

Distinguishing features and similar communities

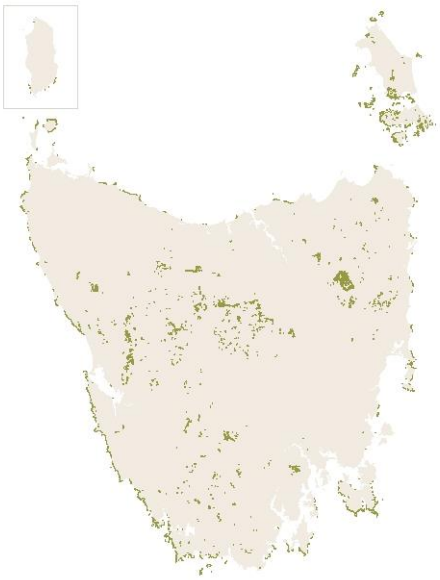
The cover of vascular plants is less than 5% for areas mapped in this community.

RFA mapping unit

Not covered by RFA mapping.

Distribution

Throughout Tasmania.



Bioregional occurrence

All bioregions.

Site characteristics, habitat and ecology

Large areas of lichen lithosere occur on granite slabs, tors and boulder fields in eastern Tasmania from Freycinet Peninsula to the Furneaux Group. The extensive areas of lichen lithoseres in eastern and central Tasmania, occur on dolerite, which provides the most fertile substrate. The meta-sediments of western Tasmania, the most infertile of the lithosere substrates, are exposed as cliffs and mountain tops. A cryptogamic crust covers the apparently bare rock, with vascular plants confined to crevices and depressions in the granite.

Vegetation composition and structure

By far the most diverse and widespread plant groups in this mapping unit are cryptogams. Exposed rock surfaces tend to be very extensively colonised by lichens. Crustose and thallose lichens are particularly prevalent, often forming a surface cover well over 50%. Covers of up to 100% are not unusual. Crustose lichens are usually the dominant life form, but unfortunately, their taxonomy is relatively poorly documented. Some species are conspicuous and brightly coloured, e.g. the speckled green of *Rhizocarpon geographicum* on inland and especially

highland rocks, or the vivid orange of *Caloplaca* spp. on coastal rocks. However, by far the most diverse are the inconspicuous species, often discernible only with a hand lens. These include *Porpidia*, *Lecidea*, *Buellia* and *Rhizocarpon* as typical genera.

The occurrence of macrolichens is more sporadic. On granites, large numbers of species of the family Parmeliaceae are frequently represented, especially the genera *Xanthoparmelia* and *Neofuscelia* (foliose green or olive-brown lichens). In alpine areas, macrolichens often grow only on the apices of large boulders where birds perch and fire protection is greater. *Usnea torulosa*, *Parmelia signifera* and *Umbilicaria* spp. are typical.

Soil-filled crevices in rocky places are also usually extensively colonised, mainly by genera that also occur on soil in heathland or other open vegetation, such as *Siphula, Cladonia* and *Cladia*.

Significant floristic differences between the major rock types can be discerned. Precambrian metamorphics tend to have the poorest flora, whereas dolerite tends to support the richest.

Mosses are also important in damp areas and can be the dominant life form on shaded slopes in high rainfall areas, where free-living algae and cyanobacteria species may also occur.

On granite and granodiorite, the sedges *Gahnia microstachya* and *Lepidosperma elatius* may colonise bare siliceous gravel between boulders. Soakage areas, gnamma pits and runnels (all undetectable on aerial photos) have a diverse and specialised flora of small vascular and non-vascular plants.

In Freycinet National Park, scattered trees of *Eucalyptus tenuiramis, Callitris rhomboidea, Hakea lissosperma* and *Eucalyptus amygdalina* may grow between boulders or in deep fissures, but their canopy may be confined by rock and therefore be less visible in aerial photographs. On the quartzite mountains in western Tasmania, the vascular flora is limited to protected areas in the lee of boulders and in deep crevices where there is less exposure. Similarly, on dolerite mountains some vascular flora may be present in fissures, under boulders and in protected areas.

Floristic communities known to occur in this mapping unit

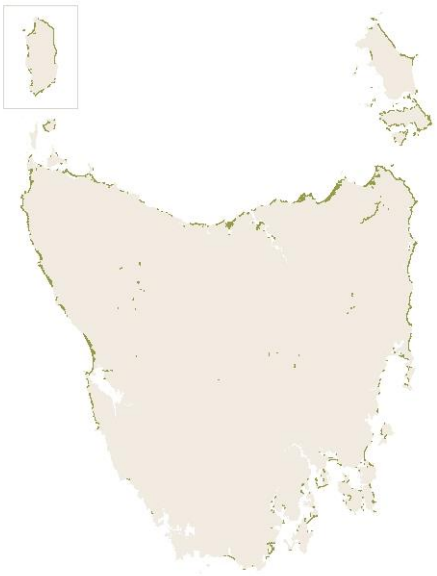
No systematic assessment has been undertaken of these environments.

Sand, mud (OSM)

General description

These are naturally non-vegetated areas of ground consisting of sand or mud. The mapping unit includes beaches, dune blowouts, sand sheets and areas next to saltmarsh and estuarine mud flats.

Birthday Bay, south of Macquarie Harbour. Grant Dixon.



Example localities

Sand – Henty Dunes; mudflats – Port Sorell estuary.

Distinguishing features and similar communities

This mapping unit is distinctive because of the absence of vegetation on the lowland, fine- textured, unconsolidated substrates. Non-vegetated areas associated with quarries and other developments are better mapped as Extra-urban miscellaneous (FUM) within the section *Agricultural, urban and exotic vegetation.*

RFA mapping unit

Not covered by RFA mapping.

Distribution

Predominantly around coasts and estuaries, especially on the north-east and north-west coasts. Also inland sand and mud deposits associated with rivers and lakes.

Bioregional occurrence

All bioregions.

Site characteristics, habitat and ecology

Areas included in this category are subject to marine or riparian disturbance through wind, tides or floodwaters. Sand beaches and sand sheets may be colonised by adventive species that may begin a succession to other vegetation communities such as scrub, grassland or herbfield. Vagrant or ephemeral, often weedy species sometimes sparsely occupy beaches. These include *Cakile* species, *Senecio vulgaris* and *Euphorbia paralias*.

Some estuarine mud flats have been invaded by the aggressive exotic *Spartina anglica*, but no native plant species are known to colonise estuarine mud flats, except on the edges where changing environmental conditions may lead to expansion of adjacent vegetation.

Vegetation composition and structure

Where vegetation does occur, it is so sparse that it s remote detection is unlikely.

Floristic communities known to occur in this mapping unit

This does not support native floristic communities.

Water, sea (OAQ)

General description

These are areas of fresh or saline water where there are no emergent aquatic plants. OAQ includes natural and artificial water bodies. The only vascular plant communities may be marine seagrass beds, which have not been mapped separately from OAQ.

Hobart Reservoir, Ridgeway. Nepelle Temby.

Example locality

Lake Gordon.

Distinguishing features and similar communities

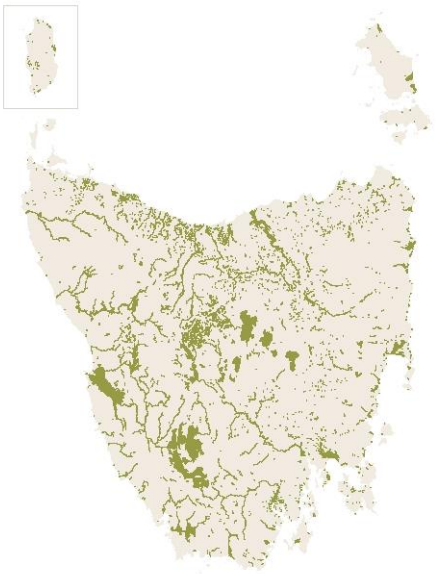
Permanent standing water, rather than vascular species, distinguishes this mapping unit. All areas of open sea are included in this unit, including areas vegetated by macrophytic algae and seagrasses.

RFA mapping unit

Not covered by RFA mapping.

Distribution

Throughout the State.



Bioregional occurrence

All bioregions.

Site characteristics, habitat and ecology

Estuarine embayments and deep impoundments are included in this mapping unit. Vascular flora may be present, but is not used to characterise this mapping unit.

Vegetation composition and structure

In freshwater areas, the vegetation is predominantly planktonic. Planktonic communities at some sites comprise unique assemblages of species. In marine areas, planktonic vegetation is also significant, and marine macroalgae or seagrass communities may also be present. Descriptions of these highly diverse communities are beyond the scope of this guide.

Floristic communities known to occur in this mapping unit

The scientific literature on marine, subtidal and deep freshwater ecosystems should be consulted for further information.