The Vegetation Communities

Moorland, sedgeland and rushland

Gymnoschoenus sphaerocephalus
Moorland, sedgeland and rushland

General description

This group contains moorland, rushland and sedgeland predominantly on low-fertility substrates in high rainfall areas. Many of the vegetation communities in this group contain *Gymnoschoenus sphaerocephalus*; some are dominated by it. Grassy sedgelands, and the variant of Restionaceae sedgeland/rushland found on steep slopes near Queenstown, seldom contain *G. sphaerocephalus* but may be closely associated with it in mosaics. *G. sphaerocephalus* is generally absent from lowland/intermediate sedgelands and grassy sedgelands.

Tasmanian buttongrass moorlands cover more than a million hectares, chiefly in the cool wet western region of Tasmania below the alpine zone. A State-wide survey of buttongrass moorlands by Jarman et al. in 1988 classified this vegetation into a number of structural and floristic communities. Buttongrass moorland is a unique vegetation type in a global context: it is the only extensive vegetation type dominated by hummock-forming tussock sedge (*G. sphaerocephalus*). The presence of this rosette species, or of the cord rushes (Restionaceae species) with which it typically associates, defines this vegetation, although it may be a minor component within some facies of the vegetation.

Buttongrass moorland is highly variable in structure, ranging from low closed sedgeland, through heathland and low open scrub to open woodland. Most communities are treeless, matching most closely to graminoid heathland as defined by Specht (1979). Buttongrass moorland is at the interface of terrestrial and wetland systems, with much of it seasonally waterlogged. Some patches meet the definition of mire; others can be defined as swamp, bog and fen (Clymo 1983).

Ponds may be well developed in poorly drained landscapes, but are generally too small to map separately as Water (*OAQ*), and are usually mapped as part of the surrounding moorland, sedgeland and rushland vegetation.

Buttongrass moorlands are divided into two types, both of which can occur on low-nutrient peat soils. “Blanket moorland” is so named because it extends onto slopes, ridges and plateaus and is not restricted to poorly–drained flats or gullies. In situations topographically protected by fire, it is often replaced by scrub and forests. Blanket moorlands are characteristic of low fertility environments and occur widely across western Tasmania. In contrast “Eastern moorland” is usually less extensive and is replaced by other vegetation types where soils are better drained. It is often underlain by more fertile substrates such as dolerite. It has its largest extent in

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the Central Highlands, but occurs in localised patches widely across eastern Tasmania.

The buttongrass moorlands of south-west Tasmania are divided into four separate mapping units: MBW, MSW, MBR and MBP. Of these, MBW is clearly defined on floristics. MBR and MSW are not clearly differentiated on species composition either from each other or from MBW. The differences are in relative species abundance and texture on aerial photographs. These communities are important indicators of soil condition. MSW occupies poorly-drained, shallow peats on the large south-west plains (Melaleuca, Louisa, Rowitta) and Tertiary gravel terraces south of Macquarie Harbour. Vegetation diversity is strongly dependent on fire history. MBR is sparse vegetation on steep slopes on quartzite mountains and the gravel fans at the base of those slopes. It is a fire-induced community on skeletal peats.

Sedgelands (e.g. MGH and MSW) and rushlands (e.g. MRR and MDS) typically grow on oligotrophic soils and are adapted to extreme environmental conditions such as drought, waterlogging, fire and low nutrients. Many species of the Cyperaceae and Restionaceae are resistant to Phytophthora, which has led to an increase in cover of these families in disease-prone areas; however, the long-term impacts of Phytophthora on community structure require further investigation (Meney & Pate 1999).

Revision

This section previously included the mapping units Sphagnum peatland (MSP) and Alkaline pans (MAP). A decision was made in late 2017 to move these two units to ‘Saltmarsh and wetlands’ (retaining their names, but recoding respectively to ASP and AAP), as these units were considered a more natural ecological fit with wetland vegetation and subject to the same broad management actions. The key to this Section has been adjusted to reflect this revision, as has the section name, which now excludes peatlands.

General management issues

Fire is a defining factor for the ecological vegetation communities in this section: both its intensity and frequency largely dictates the form of the vegetation. Most of these ecological vegetation communities are early successional stages that will develop into other vegetation types in the absence of fire (Jackson 1968, Brown & Podger 1982). The vegetation is highly pyrogenic, largely because the dead leaves hang within and below the canopy and quickly dry after rain (Marsden-Smedley & Catchpole 1995a, b, Balmer 1991). Fires can burn in this vegetation after as little as one or two rain-free days, even in winter. At some sites, the peat soils on which these communities occur can dry out and burn, leaving bare rock; after such an event, regeneration is very slow (Balmer 1991).

A major threat to these communities is the plant pathogen Phytophthora cinnamomi, which is particularly damaging to several plant families that are key components of many of these communities. It is widespread in these communities throughout the State, making areas that are free from the pathogen significant (Schahinger et al. 2003). The most susceptible families Dileniaceae, Epacridaceae, Fabaceae, Proteaceae and Rutaceae are common and extensive in sedgeland, rushland and moorland communities. Phytophthora cinnamomi reduces plant species diversity in infected areas. In extreme cases, it kills most of the woody species, leaving vegetation dominated by sedges and rushes (Kirkpatrick & Harris 1999).

Some areas of this ecological vegetation community have been degraded by burning followed by stock grazing, often resulting in the establishment of unpalatable shrubs and, in some cases, conversion to species-poor heathland (Kirkpatrick 1991, Balmer 1991).

Some buttongrass communities have been identified as critical habitat for the endangered orange-bellied parrot (Neophema chrysogaster). This species has feeding preferences at specific ages for vegetation after fire and therefore has quite specific management needs (Bryant & Jackson 1999). For more information refer to Tasmania’s Threatened Fauna Handbook and Orange-Bellied Parrot Recovery Plan (Orange- Bellied Parrot Recovery Team 1998).

References and further reading


Key to Moorland, sedgeland and rushland

1. **Gymnoschoenus sphaerocephalus** cover greater than 75%
   - Pure buttongrass moorland (MBP) 16

1. **Gymnoschoenus sphaerocephalus** cover generally between 10% and 75%
   2. Shrubs conspicuous in a layer above graminoids sometimes forming abundant shrubby patches or copses
   3. *Eucalyptus nitida* present as small emergent trees, or shrubs including a diverse flora of prickly species such as *Aotus ericoides*, *Leptospermum scoparium*, *Pultenaea* spp. and *Allocasuarina* spp.
   - See Key to Scrub, heathland and coastal complexes

3. *Leptospermum* and/or *Melaleuca* species dominant in a distinctly taller stratum over *Gymnoschoenus sphaerocephalus*; *Eucalyptus nitida* uncommon
   - Buttongrass moorland with emergent shrubs (MBS) 10

2. Shrubs not conspicuously dominant; if present, a similar height to the graminoids; taller shrubs sparse or absent
   4. Gravel and/or bare skeletal peat exposed through sparse vegetation cover on quartzite slopes
   - Sparse buttongrass moorland on slopes (MBR) 20

4. Moorland with western species such as *Leptospermum nitidum* and *Epicris corymbiflora*; *Melaleuca squamea* often important (vegetation not confined to flats)
   - Western buttongrass moorland (MBW) 26

4. Cord rushes dominant or co-dominant, including *Chordifex hookeri*, *Sporadanthus tasmanicus*, *Eurychorda complanata*; 400 m altitude or lower
   - Western lowland sedgeland (MSW) 28

4. *Gymnoschoenus sphaerocephalus* occurring in association with eastern species such as *Leptospermum scoparium*, *Boronia citriodora*, *Epicris lanuginosa* and *Baeckea gunniana*; vegetation confined to poorly–drained flats and drainage lines
   - Eastern buttongrass moorland (MBE) 12

1. *Gymnoschoenus sphaerocephalus* cover of 10% or less, sometimes absent or more abundant in adjacent vegetation or in mosaics
   2. Treeless vegetation with greater than 30% cover of *Sphagnum* moss species
   - See Key to Saltmarsh and wetland (*Sphagnum* peatland (ASP))

2. Treeless vegetation with less than 30% cover of *Sphagnum* moss species
   3. Lowland vegetation (below 750 m altitude) in which *Balaskion australis*, *Astelia alpina* and *Gleichenia alpina* are sparse or absent
   - See next page of key
4 Vegetation cover not sparse; dominated by cord rushes (*Chordifex, Leptocarpus, Empodisma, Eurychorda*); shrubs sparse;  
Restionaceae rushland (MRR) 18

4 Gravel and/or bare skeletal peat exposed through sparse vegetation cover on quartzite slopes  
Sparse buttongrass moorland on slopes (MBR) 20

4 Sparsely vegetated gravel and sandy pans associated with alkaline springs in far south-west Tasmania bounded by buttongrass moorlands  
See Key to Saltmarsh and wetland (Alkaline pans (AAP))

4 Lowland grassy vegetation, which may be co-dominated by *Lomandra longifolia* and/or *Lepidosperma* species but little or no *Lepidosperma filiforme*  
See Key to Native grassland (Lowland grassy sedgeland (GSL))

4 Heathy vegetation with *Gahnia microstachya* and/or *Lepidosperma* species but where *Lepidosperma filiforme* is sparse or absent  
See Key to Scrub, heathland and coastal complexes

3 Highland vegetation (above 600 m)

4 Conspicuously grassy vegetation dominated by sedges such as *Lepidosperma filiforme* and where cord rushes may also be common.  
Highland grassy sedgeland (MGH) 14

4 Shrubland dominated by *Melaleuca squamea* with an understorey including sedges such as *Carpha alpina*, or *Isophysis tasmanica* are common  
See Key to Scrub, heathland and coastal complexes (*Melaleuca squamea* heathland (SMM))

4 Vegetation dominated by *Diplarrena latifolia*  
Subalpine *Diplarrena latifolia* rushland (MDS) 24

4 Vegetation dominated by highland ferns such as *Gleichenia alpina* or graminoids such as *Astelia alpina, Baloskion australe, Carpha alpina, Isophysis tasmanica* and *Oreobolus* species in which upright shrubs and grasses are sparse, with or without cushion species  
See Key to Highland treeless vegetation
Buttongrass moorland (undifferentiated) (MBU)

**General description**
Buttongrass moorland (undifferentiated) (MBU) comprises any buttongrass moorland vegetation where identification to a specific ecological vegetation community has not been attempted; predominantly in the state's north-west.

It is intended that vegetation mapped as MBU will be attributed to specific units (i.e. Buttongrass moorland with emergent shrubs (MBS), Western buttongrass moorland (MBW), Eastern buttongrass moorland (MBE), Western lowland sedgeland (MSW), Sparse buttongrass moorland on slopes (MBR), Restionaceae rushland (MRR) and Pure buttongrass moorland (MBP) as mapping is revised. Continued use of MBU is discouraged and limited to use where field access is not possible and remote allocation to a more specific unit is not advised.

**Example locality**
Not applicable.

**Distinguishing features and similar communities**
As for MBS, MBW, MBE, MSW, MBR, or MBP

**RFA mapping unit**
Not covered by RFA mapping.

**Distribution**
As for MBS, MBW, MBE, MSW, MBR, or MBP

**Bioregional occurrence**
The bioregions in which undifferentiated buttongrass moorland is still mapped are as follows: KIN, TCH, TNS, TSR, TWE.

**Site characteristics, habitat and ecology**
As for MBS, MBW, MBE, MSW, MBR, or MBP

**Vegetation composition and structure**
As for MBS, MBW, MBE, MSW, MBR, or MBP

**Floristic communities known to occur in this mapping unit**
This is the undifferentiated mapping unit for buttongrass–dominated vegetation; depending on where it is used it may include all equivalent floristic communities noted in the MBS, MBW, MBE, MSW, MBR and MBP descriptions.
Buttongrass moorland with emergent shrubs (MBS)

General description
This mapping community describes blanket moorland vegetation overgrown by *Leptospermum* and *Melaleuca* species. MBS also incorporates sequences of vegetation across siliceous ridgelines: typically a narrow belt of *Gymnoschoenus sphaerocephalus* moorland with *Melaleuca squamea* on the crests of ridges, and shrubbier, usually *Leptospermum*-dominated, vegetation downslope.

MBS is also characterised by *Isophysis tasmanica*, *Dracophyllum milligani*, *Carpha alpina*, *Eurychorda complanata* and *Epacris serpyllifolia* in the ground layer. Where MBS occurs in eastern Tasmania it is distinguished from Wet heathland (SHW), by having *Gymnoschoenus sphaerocephalus* as a significant component of the ground layer (i.e. > 10% in MBS).

RFA mapping unit
Not covered by RFA mapping.

Distribution
This is a widespread and common community with a stronghold within the western World Heritage Area and around the West Coast Range, but also occurring in eastern parts of the state such as in the north-east.

Example localities
Examples of this vegetation occur along the Strathgordon Road around McPartlans Pass and beyond Strathgordon near White Spur lookout.

Distinguishing features and similar communities
There is a blurred distinction between MBS and Western wet scrub (SWW) with *Eucalyptus nitida* appearing at the boundary and increasing in height within SWW. SWW is usually applied to more or less uniform *Leptospermum*/*Eucalyptus* species scrub where buttongrass is absent or confined to small openings. The distinction between MBS and Western buttongrass moorland (MBW) is that the canopy is taller and denser in MBS, and in many places on the west coast, long-unburnt MBW will become MBS as myrtaceous species overgrow the sedges. MBS may grade into the lowland *Melaleuca squarrosa* scrub (SMR) where *Melaleuca squarrosa* replaces *M. squamea*, *Leptospermum nitidum* and *L. glaucescens* disappear and cord rushes replace *Gymnoschoenus sphaerocephalus*. The distinction between MBS and the subalpine *Melaleuca squamea* scrub (SMM) is the prominence of *Leptospermum* species in SMM and of *Melaleuca squamea* in SMM.

Bioregional occurrence
BEL, FUR, KIN, TCH, TNS, TSE, TSR, TWE.

Site characteristics, habitat and ecology
This vegetation represents a late successional stage within buttongrass moorland. It occurs in infrequently burnt areas on wet, acid, peat soils over siliceous substrates. MBS is most common on moderate to steep slopes. Small pools may be well-developed in poorly-drained landscapes, but unless
these are sufficiently large to map as Water (OAQ), they are mapped as MBS.

**Vegetation composition and structure**

The vegetation is typically treeless, but occasionally has a few trees of *Eucalyptus nitida* in the centre of copses or sparsely distributed as an emergent canopy. The dominant shrubs in this moorland, which are usually emergent over a sedge layer, include *Leptospermum nitidum*, *L. glaucescens* and/or *L. scoparium*. *Melaleuca squamea*, *Banksia marginata*, *Acacia mucronata*, *Cenarhenes nitida*, *Nematolepis squamea* and *Philotheca virgata* are less abundant than the shrubs, forming a patchy canopy. The sedge layer is diverse but includes *Gymnoschoenus sphaerocephalus* and often also *Chordifex hookeri*, *Eurychorda complana*, *Empodisma minus*, *Calorophus erosris*, Patersonia species, *Lepidosperma filiforme*, *Xyris marginata* and *Gahnia grandis*. *Sprengelia incarnata* and *Bauera rubioides* are also common shrubs in the understorey.

Where MBS occurs in the east of the state scattered emergent eucalypts may include *Eucalyptus amygdalina*, *E. rodwayi*, *E. ovata* or *E. viminalis*. Emergent shrubs of the genus *Allocasuarina* may be common, as well as *Leptospermum lanigerum*, *L. scoparium*, *Melaleuca squamea*, *M. virens*, *Banksia marginata*, *Acacia spp.* (including *A. mucronata*) and *Oxylobium ellipticum*. Smaller shrubs and heath can include *Epacris lanuginosa*, *Sprengelia incarnata*, *Leucopogon collinus*, *L. ericoides*, *Bauera rubioides* and *Lomatia tinctoria*. Small herbs may include *Boronia parviflora*, *Hibbertia procumbens*, *Rubus gunnianus*, *Stylidium graminifolium*, *Nertera granadensis* and *Mitrasacme serpyllifolia* with the ferns *Gleichenia dicarpa*, *G. alpina* and *Pteridium esculentum*. A sedge layer often contains large robust *Gymnoschoenus sphaerocephalus* as well as species of *Diplarrrena*, *Lepidosperma filiforme*, *Gahnia grandis*, *Eurychorda complanata* and *Astelia alpina*.

**Floristic communities known to occur in this mapping unit**

**Buttongrass moorland:**
- B12 Dry copses; also occurs in S WW, DNI & SHW
- B13 Wet copses; also occurs in S WW, WN L, DOV, SM R & NLM
- B14a Common mountain moor; also occurs in MB W & SMM
- B14b Highland standard peat; also occurs in MBR & S MM
- B15 Mountain copses; also occurs in RSH & SSW
- B1a Standard peat; also occurs in MBR & MB W
- B1b Standard pebbles; also occurs in MBR
- B4 Layered blanket moor; also occurs in MB W & SMM
- E8 Layered eastern moor; also occurs in MBE & SMM

**Heath:**
- 5 *Sprengelia incarnata*–*Gymnoschoenus sphaerocephalus*–*Xyris* spp. heath; also occurs in MS W & SH W
Eastern buttongrass moorland (MBE)

**General description**

Buttongrass moorland is typical of the Central Highlands and eastern Tasmania. *Gymnoschoenus sphaerocephalus* is the dominant feature of the vegetation, but a variety of species and scattered shrubs are usually present. This vegetation is characteristic of acid peat soils on poorly–drained flats and gentle slopes.

![Crade Valley. Keith Corbett.](image)

**Example locality**

Cradle Valley.

**Distinguishing features and similar communities**

A cover of between 25% and 75% *Gymnoschoenus sphaerocephalus* distinguishes this buttongrass community from others. The cord rushes are generally a minor component of the vegetation, with the exception of *Eurychorda complanata* above about 650 m. The coral fern *Gleichenia alpina* may be important and form large mosaic patches in high-altitude MBE. This community has some prominent species in common with other buttongrass moorland communities, particularly MSW, MBW, MBR and MBP. Distinguishing shrub species (not always present) include *Leptospermum scoparium, Almaleea subumbellata, Baeckea gunniana, Boronia rhomboidea, Boronia citriodora, Melaleuca virens, Epacris gunnii, Epacris lanuginosa, Olearia algida* and *Pultenaea dentata*.

**RFA mapping unit**

Not covered by RFA mapping.

**Distribution**

MBE occurs patchily in the Central Highlands and eastern Tasmania. In the Central Highlands, it grows particularly in quartzite derived soils in the Cradle Mountain area, whereas in south-east and eastern Tasmania, MBE grows on various substrates. MBE does not occur above about 950 m.

![MBE distribution map](image)

**Bioregional occurrence**

BEL, FUR, TCH, TNS, TSE, TSR, TWE.

**Site characteristics, habitat and ecology**

MBE is characteristically restricted to acid peat soils on poorly–drained flats and gentle slopes, over a variety of rock types. Poor–drainage, infertile soils and frequent fire inhibit this moorland vegetation from developing into scrub or other tree-dominated vegetation, although potential tree species such as *Leptospermum langerum* and *L. scoparium* are usually present. Small pools may be well-developed in these poorly-drained landscapes, but unless these are sufficiently large to map as Water (OAQ), they are mapped as MBE.

On the quartzites of the Black Bluff Range, west of Cradle Mountain, there is a floristic gradation from Eastern buttongrass moorland MBE to Western buttongrass moorland MBW. MBE occurs on substrates that are more fertile (and at lower
altitudes) nearby in the Vale of Belvoir and west of the range at Romney Marsh.

Vegetation composition and structure

The vegetation in MBE is less than 2 m tall, although there may be sparse emergents.

In addition to *G. sphaerocephalus*, typical species in MBE include *Leptospermum scoparium*, *L. lanigerum*, *Melaleuca squarrosa*, *M. squamea*, *Sprengelia incarnata*, *Baeckea gunniana*, *Epacris lanuginosa* and *Boronia citriodora*. *Gleichenia alpina*, and *Eurychorda complanata* typically occur in inter-tussock spaces in the high-altitude forms of MBE.

Floristic communities known to occur in this mapping unit

Buttongrass moorland:

E1a Common wet eastern heathy; also occurs in SMM

E1b Eastern woolly tea-tree; also occurs in SMR

E2 Lowland eastern sedgy; also occurs in MRR

E3 Sedgy *Melaleuca gibbosa* also occurs in SHW

E4 Eastern sword sedgeland

E7 Pure buttongrass; also occurs in MBP

E8 Layered eastern moor; also occurs in MBS & SMM

Peatlands with *Sphagnum*:

3 Buttongrass–*Sphagnum* bogs; also occurs in ASP

Grassland:

37 *Gymnoschoenus sphaerocephalus–Comesperma retusum* grassy sedgeland; also occurs in GPH
Highland grassy sedgeland (MGH)

General description
A mixture of sedges and native tussock grasses dominates this community. *Lepidosperma filiforme*, *Poa labillardieri* and/or *P. gunnii* and *Empodisma minus* are usually present. Periodically inundated subalpine and alpine flats, often marginal to shallow lakes, have grassy sedgeland dominated by *Carex gaudichaudiana* and/or *Carpha alpina* and a few herbs in the wettest areas, with a sparse or dense overstorey of grasses.

![Lake Olive Track. Sib Corbett.](image)

Example locality
Vale of Belvoir.

Distinguishing features and similar communities
*MGH* is distinguished from Highland *Poa* grassland (*GPH*) by the prevalence of *Lepidosperma filiforme*. *Poa* species are important but not dominant in *MGH*. Lowland sedgy grassland (*GSL*) occurs at a lower altitude (below about 600 m). Restionaceae rushland (*MRR*) occurs in similar areas on the eastern Central Plateau. However, *MGH* has many grass species, *Lepidosperma filiforme* and small heathy shrubs. It has fewer Restionaceae species, emergent *Sprengelia incarnata* and *Gymnoschoenus sphaerocephalus* than *MRR*. Eastern buttongrass moorland (*MBE*) may occur in mosaics with *MGH*. is distinguished by the dominance of (often large) *G. sphaerocephalus* tussocks separated by *Gleichenia alpina*, *Eurychorda complanata*, *Empodisma minus* and a few herbs and grasses. *MGH* forms mosaics with subalpine *Diplarrrena latifolia* rushland (*MDS*) at the southern end of the Vale of Belvoir. Although the two share many species, *MDS* is dominated by *Diplarrrena latifolia*. The wet grassy sedgeland facies of *MGH* dominated by *Carex gaudichaudiana* is distinguished from wetlands by the absence of aquatic species.

RFA mapping unit
Not covered by RFA mapping.

Distribution
*MGH* occurs as small patches in the highlands of the north-east and the plains of the Surrey Hills Block in the north-west. In central Tasmania and the eastern Central Plateau, *MGH* occupies often-extensive plains and valley floors.

![Map showing bioregional occurrence of Highland grassy sedgeland (MGH).](image)

Bioregional occurrence
BEL, TCH, TNM, TNS, TSE, TSR, TWE.

Site characteristics, habitat and ecology
These communities occur on moderately to poorly-drained sites, including frost hollows, usually between about 600 m and 850 m but, in the case of wet grassy sedgeland, as high as 1300 m. Small pools may be well-developed in these poorly-drained landscapes, but unless these are sufficiently large to map as Water (*OAQ*), they are mapped as *MGH*. 
The substrate is usually fertile and developed on basalt, dolerite, mudstone, limestone or alluvial sediments, but organic soils may have developed on poorly-drained plains, sometimes as a thin veneer over alluvial soils. In some areas, the presence of deep alluvial soils is more important to the development of grassy vegetation than the nature of the underlying rocks. The open structure may have been created by fire and maintained over time by periodic firing or grazing; this appears to be the case at Paradise Plains. Wet highland grassy sedgeland on Pelion Plains and the Central Plateau were subject to summer grazing and firing from the early 1900s until the 1930s and 1980s respectively. Poor drainage and frost have discouraged forest invasion.

**Vegetation composition and structure**

The sedgy component is variable between sites (and depends on drainage), although *Lepidosperma filiforme* is usually the dominant species in association with *Empodisma minus* and *Baloskion australe*, with some *Carex* species and *Carpha alpina*. *Gymnoschoenus sphaerocephalus* may be present. *Poa labillardieri* typically forms the dominant grass cover, sometimes with *Australopyrum pectinatum*, and species of *Austrodanthonia* and *Deyeuxia* common at some sites. At higher altitudes *Poa gunnii* may be common.

The ground layer is a mosaic of grasses and sedges, usually quite rich in herbs (e.g. *Helichrysum scorpioides*, *Wahlenbergia* species, *Acaena* species, *Senecio gunnii*, *Ajuga australis*, *Gunnera cordifolia*, *Gonocarpus micranthus*, *Hydrocotyle hirta*) and often with patches of herbfield, cushions (at high altitudes) or *Sphagnum cristatum* interspersed. Species richness decreases, as the sward of grass or sedge tussocks becomes denser. Periodically burnt sites are more species-rich. Short shrubs may also occur at low densities or in localised patches and near margins, particularly *Richea acerosa*, *R. scoparia*, *Hakea microcarpa*, *Epacris gunnii* and *Leucopogon hookeri* and *Baeckea gunniana*.

There may be scattered *Eucalyptus* species (< 5% cover), most commonly *Eucalyptus delegatensis*, *E. dalrympleana*, *E. roldwayi* or *E. pauciflora*, with *E. gunnii* and *E. coccifera* at higher altitudes. Where small sedgy grassland patches occur within eucalypt forest or mixed forest, small tree species, such as *Tasmannia lanceolata* and *Leptospermum lanigerum*, may invade over time.

Wet grassy sedgeland in its simplest form consists of the short sedge *Carex gaudichaudiana* and a few herbs.

**Floristic communities known to occur in this mapping unit**

- **Wetlands:**
  - 24 *Carex gaudichaudiana* also occurs in **ASF**

- **Buttongrass moorland:**
  - E10 Highland dry sedgy
Pure buttongrass moorland (MBP)

**General description**

MBP is distinguished by the dominance of often very large tussocks of the sedge *Gymnoschoenus sphaerocephalus* (more than 75% cover) and very low species diversity. It generally occurs on alluvial flats along creek margins and near lake shores.

Near Dip Falls, north-west Tasmania. Micah Visoiu.

**Example locality**

Creek fringes near Scotts Peak Road.

**Distinguishing features and similar community**

This community is part of a continuum of buttongrass moorland plant communities described by Jarman et al. (1988). MBP is distinguished from other mapping units by a tall (generally ~1 m) and dense cover of *Gymnoschoenus sphaerocephalus* tussocks. This distinguishes it from the western buttongrass communities, which are all low in *G. sphaerocephalus*. A western facies of MBP has emergent *Sprengelia incamata* and sometimes *Leptospermum nitidum*. Some high-altitude Eastern buttongrass moorland (MBE) looks similar to MBP in texture, with large, widely separated tussocks, a few emergent *Olearia piniolus* and a prominent ground layer of *Empodisma minus*, *Eurychorda complanata* and *Ozothamnus rodwayi*. MBP with eastern affinities is nearly closed canopy with sparse emergent *Comesperma retisum*, *Baeckea gunniana*, *Melaleuca virens* and *Leptospermum langerum*.

**RFA mapping unit**

Not covered by RFA mapping.

**Distribution**

The eastern facies of MBP is most extensive in the central and north-eastern highlands and less common in north-west and eastern Tasmania where it is generally restricted to small patches along creeks and swamp margins. The western buttongrass moorland facies is common and widespread in the lowlands of south-west and western Tasmania, although patches of pure buttongrass in this region are typically small.

**Bioregional occurrence**

TCH, TNS, TSR, TWE.

**Site characteristics, habitat and ecology**

The community occurs on alluvial plains, creek margins, swamps, and forest ecotones where soils are likely to be deeper than in other moorland communities. *G. sphaerocephalus* forms an almost complete cover with small inter-tussock spaces occupied by standing water, bare peat or dead plant material. Unless pools are sufficiently large to map as Water (OAQ), they should be mapped as MBP. Buttongrass plants form distinct pedestals, which may elevate the roots above the water table. Other species may be associated with MBP but are a minor component.
Vegetation composition and structure

*Gymnoschoenus sphaerocephalus* forms more than a 75% cover in MBP communities and sometimes provides close to 100% cover. Two facies of the community have been described by Jarmann et al. (1988): “blanket” and “eastern” community associations. The eastern facies of MBP generally occurs at medium to high altitudes and may have sparse but emergent shrubs of *Comesperma retusum, Baeckea gunniana, Melaleuca virens* and *Leptospermum langerum*. Sparse herbs including *Poa* species, *Hydrocotyle* species, *Oxalis magellanica* and *Erigeron* species also distinguish the eastern facies of this community. The western buttongrass moorland facies of MBP is characterised by occasional and sparse emergents such as *Leptospermum nitidum, L. scoparium, Leptocarpus tenax* and herbs such as *Actinotus bellidioides* and *Drosera binata*.

Other species typical of the community include *Empodisma minus, Ehrharta tasmanica, E. acuminata, Bauera rubioides, Baumea tetragona, Centrolepis monogyna, Diplarrena latifolia, Epacris lanuginosa, Gahnia grandis, Gleichenia dicarpa, Sporadanthus tasmanicus, Lycopodiella lateralis, Melaleuca squamea, M. squarrosa, Sprengelia incarnata, Xyris marginata, X. muelleri* and *Schoenus lepidosperma*.

Floristic communities known to occur in this mapping unit

Buttongrass moorland:
B3 Pure buttongrass
E7 Pure buttongrass; also occurs in MBE
Restionaceae rushland (MRR)

General description
This community consists of treeless, generally sparse rushland (< 1 m tall) dominated by Restionaceae species. It is found on poorly–drained flats, but also on the steep slopes of Mount Owen and Mount Lyell. The dominant species are any of *Chordifex hookeri*, *Baloskion australis*, *Leptocarpus tenax* and/or *Sporadanthus tasmanicus*. *Gymnoschoenus sphaerocephalus* is generally absent, but occurs above 600 m on the eastern Central Plateau as a minor species and in mosaics with MRR on the gentler slopes around Lake Burbury. The community includes *Sporadanthus tasmanicus* and *Leptocarpus tenax* wet moorlands in south-west Tasmania and wet sedgeland.

Example localities
The Central Plateau near the Lyell Highway (600–800 m); around Lake Burbury (250 m); the slopes of Mount Owen and Mount Lyell (up to 550 m).

Distinguishing features and similar communities
MRR is distinguished from the *Gymnoschoenus sphaerocephalus* tussock sedgeland communities (MBP, MBE, MBW, MBU) by its minimal amounts of *G. sphaerocephalus* and sparse shrubs (both less than 5%). The west coast facies of MRR has similarities to Sparse buttongrass moorland on slopes (MBR) but is distinguished from it by the dominance of Restionaceae species and the dominance of *Gymnoschoenus sphaerocephalus* in MBR. Highland MRR (above 700 m, usually on dolerite) contains generally scattered patches of *G. sphaerocephalus*, and is usually characterised by emergent *Sprengelia incarnata*. Eastern buttongrass moorland (MBE) has greater cover of *G. sphaerocephalus* than highland MRR. MRR differs from Eastern alpine sedgeland (HSE) in only subtle respects (MRR has *Sprengelia incarnata* and usually some *G. sphaerocephalus* but lacks *Astelia alpina*, *Baloskion australis* and *Gleichenia alpina* is uncommon).

RFA mapping unit
Not covered by RFA mapping.

Distribution
MRR is mapped anywhere in Tasmania, generally below 750 m, where cord rushes dominate and *Gymnoschoenus sphaerocephalus* is uncommon.

Bioregional occurrence
BEL, FUR, KIN, TCH, TNS, TSE, TSR, TWE.

Site characteristics, habitat and ecology
MRR occurs from high-rainfall lowland to subalpine regions across a range of infertile, sometimes poorly–drained acid substrates including dolerite, basalt, alluvium and quartzite gravels. It is likely that MRR has had a history of frequent firing in some areas, particularly on the slopes of the West Coast Range.
Small pools may be well-developed in these poorly-drained landscapes, but unless these are sufficiently large to map as Water (OAQ), they are mapped as MRR.

**Vegetation composition and structure**

This community is usually treeless, with a layer of graminoids up to 1 m tall.

Sparse scattered trees of *Eucalyptus rodwayi* or *E. gunnii* may overtop MRR on more fertile substrates (dolerite, basalt, alluvium), and *Acacia mucronata* and *E. nitida* occasionally form thickets within MRR near the west coast.

The species composition of the sedges in MRR is highly variable and is dependent on the substrate, altitude and drainage. On dolerite in the central highlands, this vegetation is dominated by *Baloskion australi.* On deep peat soils at low and mid-elevations *Leptocarpus tenax* is typically dominant or co-dominant in a mosaic with *Sporadanthus tasmanicus, Eurychorda complanata* and *Chordifex hookeri.* This vegetation has a pink or red hue in spring when the *L. tenax* is in flower. *S. tasmanicus* can be locally dominant on the lowland flats of south-west Tasmania. On slopes where soils are skeletal or thin, *A. hookeri* is often dominant to varying degrees. Dense tangles of any of the branching cord rush species, *Calorophus elongatus,* *C. erostris,* *Empodisma minus* and *S. tasmanicus,* may occur along creeks and drainage lines. These species also occur widely in lower abundance throughout the vegetation. The sedge *Lepidosperma filiforme* or other *Lepidosperma* species may occur but never dominate. Associated species may include *Sprengelia incarnata* and species of *Xyris* and *Utricularia.*

Other shrub species include *Bauera rubioides* and members of the Epacridaceae family. In some dolerite basins there are a few emergent *Hakea epiglottis* or *Leptospermum lanigerum.* Herbs may include *Actinotus* species and other Apiaceae species, *Lycopodiella laterale* and *Stylidium graminifolium.* *Gymnoschoenus sphaerocephalus* may occur on the margins where drainage is better, and occurs within the mapping unit in some parts of the eastern Central Plateau. In very wet areas there may be a transition into wetland dominated by Carex species. Marginal belts of either *Leptospermum* species (*L. lanigerum, L. scoparium* or *L. nitidum*) or *Melaleuca* species, or in some areas *Melaleuca virens* or *Ozothamnus* species may occur. *Gleichenia microphylla* and minor patches of *Sphagnum cristatum* may be present.

**Floristic communities known to occur in this mapping unit**

**Buttongrass moorland:**

- **B5** South-western sedgy; also occurs in **MSW**
- **B7** Daisy pans; also occurs in **MBW**
- **B8** Clay pans
- **B10** South-western sword sedgeland; also occurs in **MSW & ASF**
- **E2** Lowland eastern sedgy; also occurs in **MBE**
- **E6** Sedgy twine-rush; also occurs in **MSW & MBW**
- **E9a** Common highland eastern sedgy
- **E9b** Sedgy austral cord-rush

Edition 2 From Forest to Fjeldmark (revised – February 2018)
Sparse buttongrass moorland on slopes (MBR)

General description
Sparse buttongrass moorland on slopes (MBR) consists of steeply and gently sloping moorland with floristics similar to Western buttongrass moorland (MBW) but with a higher proportion of sedges, particularly Chordifex hookeri. The vegetation is low and open or sparse, and gravel and bare peat is visible through it.

Example locality
Pandora Hill, visible from the Melaleuca airstrip.

Distinguishing features and similar communities
This vegetation has floristic similarities with other buttongrass moorlands mapped in western Tasmania but is distinguished by the sparsity of vegetation and the presence of Gymnoschoenus sphaerocephalus. MBR is distinguished from Western buttongrass moorland (MBW) by its sparse texture and the prominence of other sedges and cord rushes. A distinct shrub layer is usually absent from MBR. Floristically MBR is close to Western lowland sedgeland (MSW) and often occurs on steep slopes and gravel fans in close association with MSW. MBR appears to be formed by excessive burning of MSW, or more often MBW, but is a metastable community due to the slow redevelopment of burnt peat soils. MSW and MBR are similar. MBR can extend well above the 400 m limit for MSW and is rarely present at low altitudes. G. sphaerocephalus may be low in abundance but is always present in MBR, whereas it is often absent or rare in MRR.

RFA mapping unit
Not covered by RFA mapping.

Distribution
Widespread in south-western and western Tasmania, extending to the border of the Tasmanian Central Highlands Bioregion.

Bioregional occurrence
TCH, TSR, TWE.

Site characteristics, habitat and ecology
This mapping unit includes Gymnoschoenus sphaerocephalus moorland vegetation burnt in the past 50 to 60 years and/or frequently burnt regions. Soil erosion and exposure of gravel may be pronounced on steep slopes. The substrate is typically siliceous, predominantly quartzite. The acid peat soils are typically thin or skeletal.

Vegetation composition and structure
Despite its sparse nature, this vegetation generally shows a moderate level of diversity. The fires, which have induced MBR, are sometimes patchy and there are some small, dense remnants with the floristic character of MBW, or sometimes MSW. Melaleuca squamea, Leptospermum nitidum and Baeckea leptocaulis may be poorly represented in MBR, but there may be some emergent Banksia marginata.
Restionaceae species, particularly *Chordifex hookeri*, are prominent co-dominants with *G. sphaerocephalus*. Shrubs such as *Sprengelia incamata, Bauera rubioides, Epacris corymbiflora* and *E. glabrata* if present, are of poor form. The ground may be coated in algal slime with struggling *Stylidium graminifolium, Boronia parviflora* and Lycopodiaceae.

**Floristic communities known to occur in this mapping unit**

Buttongrass moorland:

B1a Standard peat; also occurs in MBS & MBW

B1b Standard pebbles; also occurs in MBS

B1c Simple standard; also occurs in MSW

B14b Highland standard peat; also occurs in MBS & SMM
**Subalpine Diplarrena latifolia rushland (MDS)**

**General description**

MDS is a graminoid rushland dominated by *Diplarrena latifolia* with a sparse cover of shrubs. A sparse cover of *Eucalyptus delegatensis* and/or *E. pauciflora* or, on less fertile sites, *E. coccifera* / *E. gunnii* may be present. Grasses and sedges may be dominant over Epacridaceae shrubs in less well–drained sites.

Example locality

Navarre Plains.

Distinguishing features and similar communities

*MDS* is characterised by the abundance or dominance of *Diplarrena latifolia*. Subalpine *D. latifolia* rushland generally grades into buttongrass moorland or highland sedgeland as drainage becomes impeded. Shrubby variants of *MDS* may occur, commonly on glacial boulder fields where drainage is very good. As slope and rockiness increases, *MDS* is usually replaced by Subalpine heathland (*SHS*), in which *D. latifolia* is generally absent. Highland grassy sedgeland (*MGH*) occurs at similar altitudes to *MDS* but is dominated by *Lepidosperma filiforme*, although it usually contains some *D. latifolia*.

RFA mapping unit

Not covered by RFA mapping.

**Bioregional occurrence**

TCH, TNS, TSR, TWE.

**Site characteristics, habitat and ecology**

Subalpine *Diplarrena latifolia* rushland occurs in western Tasmania between 700 m and 900 m on well–drained, moderately fertile rocky sites, on dolerite, basalt, on glacial debris composed of dolerite or limestone. well–drained sites usually have an open canopy of highland *Eucalyptus* species. Sites are primarily gentle rises, just above the level of surrounding or fringing plains.

Vegetation composition and structure

*Diplarrena latifolia* is either abundant or completely dominant in this rushland. On slight rises in the plains west of Derwent Bridge *MDS* usually has a sparse cover of *Eucalyptus delegatensis* mixed with *E. pauciflora*, which is most abundant at the edges of the boulder mounds. Here *Diplarrena* is commonly associated with *Leptocoryphilla juniperina* and scattered shrubs including *Lomatia polymorpha*, *Olearia persoonioides* or *O. erubescens*, *Hakea* species, *Bossiaea niparia*, *B. cordigera*, *Oxylobium ellipticum*, *Hovea montana* and *Epacris gunnii*. On less fertile sites the rushland may have a sparse cover of *E. coccifera* / *E. gunnii* where sedges, grasses, ferns and fern allies tend to be dominant in the understorey. Treeless *MDS* rushland occurs in
subalpine valleys in deeper dolerite or basalt soils: for example Romney Marsh (basalt) and parts of the Central Plateau east of Derwent Bridge (dolerite). In all these places MDS grades into Eastern buttongrass moorland (MBE), apparently on dolerite.

South of Lake Ayr, moraine ridges carry a graminoid/shrubby heathland in which Diplarrena latifolia and Poa species are co-dominant with Leptecophylla juniperina subsp. parvifolia and Monotoca linifolia var. algida. Lissanthe montana, Oxylabium ellipticum and Coprosma nitida are also present and Stylidium graminifolium is prominent among the herbs. There is an open canopy of Eucalyptus coccifera, with some E. delegatensis and also E. gunnii, which dominates in the surrounding wetter areas. Buttongrass, Restionaceae species and Lepidosperma filiforme form incursions from the lower, poorly-drained areas.

Treeless MDS at Romney Marsh consists of tussocks of Diplarrena with Poa gunnii, Lissanthe montana and herb patches (Stylidium graminifolium, Cardamine species, Acaena montana, Pelargonium species, Dichondra repens) between. There is some emergent Coprosma nitida.

In the Vale of Belvoir Diplarrena latifolia makes up about half the cover, with Poa gunnii, Lepidosperma filiforme, Empodisma minus and abundant herbs making up the rest.

**Floristic communities known to occur in this mapping unit**

There are no published floristic communities in this ecological vegetation community.
Western buttongrass moorland (MBW)

**General description**

Western buttongrass moorland (MBW) is characterized by Gymnoschoenus sphaerocephalus co-dominant with Melaleuca squamea and/or Leptospermum nitidum. The shrubs may form a sparse, low canopy or be part of the blanket of sedges, depending on fire history. Sedges and cord rushes are variable in abundance but Empodisma minus and the shrubs Bauera rubioides, Baeckea leptocaulis, Sprengelia incamata and Boronia pilosa are ubiquitous. This community is common in western Tasmania on undulating flats and slopes up to 1 050 m.

**Example localities**

Strathgordon Road (opposite The Sentinels); Scotts Peak Road (Edgar Dam, Condominium Creek, Mount Eliza walking track).

**Distinguishing features and similar communities**

MBW is a widespread and typical vegetation community in western Tasmania. It is distinguished from some other moorland communities in western Tasmania by a cover of up to 25% (rarely more than 30%) Gymnoschoenus sphaerocephalus combined with shrubs, particularly Leptospermum nitidum and/or Melaleuca squamea. However, most moorland has a number of species in common. MBW is distinguished from Eastern buttongrass moorland (MBE) in having less G. sphaerocephalus (MBE may have up to 70% cover). MBW has Leptospermum nitidum instead of L. scoparium (in MBE), Epacris corymbiflora instead of E. laruginosa or E. gunnii, Baeckea leptocaulis instead of B. gunniana and Boronia pilosa, not B. citriodora. The distinction between MBW and other south-western moorland units (MRR, MBR and MSW) is not so clearly species-based. MRR, MBR and MSW are characterized by an often sparse texture, less G. sphaerocephalus and greater abundance of other sedges and cord rushes. Melaleuca squamea scrub (SMM) is distinguished from MBW by occurring over 650 m and includes the following inter-tussock plants: Isophysis tasmanica, Dracophyllum milliganii, Anemone crassifolia and Epacris serpyllifolia. Where fire has been long absent (or nutrient levels are relatively high) and there is a dominant shrub layer of Leptospermum species with Melaleuca squamea overtopping G. sphaerocephalus tussocks, this vegetation is mapped as Buttongrass moorland with emergent shrubs (MBS).

**RFA mapping unit**

Not covered by RFA mapping.

**Distribution**

MBW is widespread in western Tasmania, extending to the western margins of the Tasmanian Central Highlands and Tasmanian Southern Ranges Bioregions.

**Bioregional occurrence**

TCH, TSR, TWE.
Site characteristics, habitat and ecology

This vegetation is characteristically restricted to acid peat soils on siliceous substrates where the topography is gently undulating to steeply sloping. Poor fertility and high fire frequency inhibit the vegetation from achieving the structure of scrub or forest. Small pools may be well-developed in poorly-drained landscapes, but unless these are sufficiently large to map as Water (OAQ), they are mapped as MBW.

Vegetation composition and structure

MBW has a variable cover of shrubs (0.6–2 m tall) overtopping the tussocks of G. sphaerocephalus, which typically occupies 25% or less cover. The most common shrub species are Leptospermum nitidum, Melaleuca squamea, Sprengelia incarnata and Baeckea leptocaulis. Banksia marginata and Agastachys odorata are sometimes present. Inter-tussock shrub species include Bauera rubioides, Boronia pilosa and Epacris corymbiflora. The most common graminoid is Empodisma minus and there may be any of Chordifex hookeri, Ehrharta tasmanica, Eurychorda complanata, Lepidosperma filiforme, Sporadanthus tasmanicus and Leptocarpus tenax. A range of herbs and ferns is also present in the ground layer, most typically Actinotus bellidioides, Gleichenia dicarpa, Lycopodium laterale, Selaginella uliginosa, Styliodium graminifolium, Boronia parviflora and Schoenus lepidosperma. Scattered emergent shrubs can include Banksia marginata, Cenarrhenes nitida and Agastachys odorata. Eucalyptus nitida thickets on well-drained ground within lowland moorlands may include typically eastern species such as Boronia citriodora, Leptospermum scoparium, L. lanigerum, Dillwynia glaberrima and Acotus ericoides. At mid-altitudes thickets usually include L. glaucescens, L. scoparium, Banksia marginata, Acacia mucronata, Agastachys odorata and Cenarrhenes nitida, while at high altitudes Oxylobium ellipticum and Eucalyptus vernicea may appear in thickets.

Floristic communities known to occur in this mapping unit

Buttongrass moorland:
B1a Standard peat; also occurs in MBS & MBR
B2 Wet standard; also occurs in MSW
B4 Layered blanket moor; also occurs in MBS & SMM
B6 Mossy sand
B7 Daisy pans; also occurs in MRR
B11 North-western dense
B14a Common mountain moor; also occurs in MBS & SMM
E6 Sedgy twine-rush; also occurs in MSW & MRR
Western lowland sedgeland (MSW)

General description
Western lowland sedgeland (MSW) is rich in graminoids and herbs. Gymnoschoenus sphaerocephalus forms about 5–10% of the cover. The community is of varying density and up to 1 m in height. Emergent shrubs more than 1 m tall are rare. Species composition depends on local drainage conditions; Melaleuca squamea is fairly abundant in wetter areas. Where the sedgeland is sparse, the cover is dominated by Chordifex hookeri. Leptospermum nitidum is scattered throughout, but is best developed on sheltered slopes.


Example locality
Rowitta Plains.

Distinguishing features and similar communities
MSW is distinguished from other major buttongrass moorlands by the low cover of Gymnoschoenus sphaerocephalus (5–10%), and is typically co-dominated by a range of cord rushes and sedges. Winifredia sola is usually present in MSW but absent from other moorland classes. MSW is distinguished from Restionaceae rushland (MRR) by the greater diversity of shrubs and other species present, and by being generally restricted to lowland plains. It is distinguished from Sparse buttongrass moorland on slopes (MBR) by the greater prominence of shrubs and, in most cases, greater cover. The differences are more structural than floristic, and strongly dependent on fire history. MSW grades into MBR on the lower slopes of many mountains in the south-west. Western buttongrass moorland (MBW) often occurs on slopes and usually has more C. sphaerocephalus (up to 25%), Melaleuca squamea and heath species than MSW, but cord rushes rarely dominate.

RFA mapping unit
Not covered by RFA mapping.

Distribution
MSW is common in the lowlands of south-west Tasmania. Robust forms are found on plains around Towterer Creek, Whitehorse Plain and south of Birchs Inlet. Sparse examples are common at Louisa, Rowitta and Melaleuca Plains, the gravel terraces south of Birchs Inlet and on gentle slopes on top of South Cape Range and Rugby Range. MSW occurs with other moorlands in mosaics near Lake Gordon and on the Arthur Plains.

Bioregional occurrence
TCH, TSR, TWE.

Site characteristics, habitat and ecology
MSW is found on lowland plains and terraces, and on gentle slopes underlain by siliceous gravel in south-west Tasmania. Soils are acid, often poorly-drained and infertile. Small pools may be well-developed in these poorly-drained landscapes, but unless these are sufficiently large to map as Water
(OAQ), they are mapped as MSW. MSW generally occupies plains below about 300 m, but it occurs as high as 400 m on the south coast, Rugby and D’Aguilar Ranges.

Vegetation composition and structure

The texture of these sedgelands varies from short and sparse to dense. *G. sphaerocephalus* cover is generally 5–10% but MSW is diverse in other sedges and graminoids, particularly *Chordifex hookeri*. Other species include *Empodisma minus*, *Sporadanthus tasmanicus*, *Leptocarpus tenax*, *Eurychorda complanata*, *Lepidosperma filiforme*, *Gleichenia dicarpa*, *Winifredia sola*, *Helichrysum pumilum*, *Stylidium graminifolium* and *Xyris* species. Shrubs are seldom abundant. *Melaleuca squamea* is typically more abundant in wetter areas. *Epacris obtusifolia* and *E. heteronema* occur with *L. scoparium* in a few drier locations.

Floristic communities known to occur in this mapping unit

Buttongrass moorland:
B1c Simple standard; also occurs in MBR
B2 Wet standard; also occurs in MBW
B5 South-western sedgy; also occurs in MRR
E6 Sedgy twine-rush; also occurs in MRR & MBW

Heath:
5 *Sprengelia incarnata*-Gymnoschoenus sphaerocephalus-Xyris spp. heath; also occurs in MBS & SHW