

Wales Grassland and Heathland Ecosystem Group Priority Action

Ceredigion Shingle Heath and Calaminarian Grassland

Shingle heath and Calaminarian grassland are associated with the metalliferous shingles of the Ystwyth and Rheidol rivers.

Shingle heath is found at three sites on the Rheidol and six on the Ystwyth supporting approximately 12 ha of heath. The sites have a complicated lithology with particle size ranging from fine gravel through to large pebbles and boulders. These shingles are associated with a variety of soils including silty mineral soils, skeletal brown earths and skeletal humic soils. The complex pattern of the substrata is reflected in the overlaying vegetation mosaics which comprise an intricate mix of *Calluna* heath, acid grassland, lichen dominated heathy grassland and tall herb vegetation. Within the heathland component there is much variation with some areas being dominated by *Calluna* and others being more open and grassy or characterized by the high frequency and cover of *Cladonia* lichens and the presence of metal tolerant forms of *Festuca ovina* and *Silene maritima* and metallophyte lichens. The grassy and lichen-rich forms of the *Calluna* heath and a lichen-rich form of heathy grassland all of which occur on thin soils over pebbles or gravel are thought to be climax communities. On deeper and more silty soils the vegetation is maintained by grazing and on sites where livestock has been removed scrub particularly *Ulex europeaus* is able to encroach on to the open vegetation.

The Calaminarian grassland comprises open vegetation with frequent metallophyte lichens and the metal-tolerant form of *Silene maritima*. The grassland is mostly found intermixed with the dry heath and may contain a patchy ericoid component. Disused mine workings and spoil heaps are also included within the site and here patches of very open Calaminarian grassland with metallophyte lichens are intermixed with bare substrate.

The unstable shingle banks of the Ystwyth and Rheidol rivers support an outstanding invertebrate fauna (see below). This assemblage includes Red Data Book and nationally scarce species. The metalliferous shingles and associated metal mine sites support an important lichen flora and the Grogwynion site is listed as an Important Plant Area.

The key factors associated with Calaminarian grassland and shingle heath are:

- High concentrations of heavy metals
- Low organic matter
- Low available macro-nutrients concentration
- Light grazing (rabbits or sheep)
- Exposed location (little shading)
- No enrichment from surrounding pasture
- High percentage gravel within river shingle (>20%)
- No other human interference e.g. tree planting/gravel extraction
- Dynamic river system causing fluxing of plant communities in response to natural river processes

Principal management actions required:

1. Avoid any further restrictions controlling the flow and movement of the rivers (to prevent reduced lateral channel activity and the stabilization of gravel bars)
2. Re-introduce or improve grazing management
3. Scrub and non-native plant species control
4. Mechanical disturbance of substrate

Priority Sites

Grogwynion
Coed Hafod (Hafod West)
Troed-rhiw-felin (Nant y Ronen)
Wenallt
Llanddwy

Other Key Sites

Aberffrwd
Blaengeufford (Dolcniw)
Alt Dihanog (Hafod East)
Gwel Ystwyth (Pont Llanafan)

Species Interest

Invertebrate Assemblage

River shingle ground beetle	<i>Lionychus quadrillum</i>
A water beetle	<i>Bidessus minutissimus</i> (Section 42),
A rove beetle	<i>Erichsonius signaticornis</i>
Five-spot ladybird	<i>Coccinella quinquepunctata</i>
A stiletto fly	<i>Thereva lunulata</i>
A wolf spider	<i>Arctosa cinerea</i>
A weevil	<i>Apion rubiginosum</i>
A rove beetle	<i>Thinobius newberyi</i> (Section 42)
A rove beetle	<i>Scopaeus gracilis</i>
A rove beetle	<i>Hydrosmecta deliculata</i>
A rove beetle	<i>Neobisnius prolixus</i>
Psepolid beetle	<i>Biblioplectus minutissimus</i>
Psepolid beetle	<i>Brachygluta pandellei</i>
A dance fly	<i>Tachydromia halidayi</i>
A spider	<i>Caviphantes saxitorum</i>

Section 42 Mine Site Lichen Community (on mines and metalliferous shingle)

Stereocaulon condensatum
Epilichen scabrosus,
Veizdaea acicularis,
Gyalidea subscutellaris.
Steinia geophana
Stereocaulon dactylophyllum
Placopsis lambii
Baeomyces placophyllus