



Lead Moss *Ditrichum plumbicola*

Biodiversity Action Plan



Background

Lead moss is a rare metallophyte that is threatened with global extinction and is categorised as 'Endangered' on the IUCN Red List. The plant was first officially recorded on the Isle of Man in 1914.

Description



Dr Des Callaghan

The shoots of lead moss are 3-8mm tall, dark green, with short, blunt, triangular leaves less than 1mm long. Identification requires experience and expertise in bryophyte identification.

Habitat

Lead moss is entirely restricted to waste from lead and zinc mines, where it grows as dense, narrow tufts or short turfs on metal-toxic spoil. It grows on very fine, silt-like spoil e.g. settling pits or in areas where fine material has washed out and accumulated. Damp but not waterlogged areas are more favoured than dry ones, and lead moss appears to be sensitive to droughts, so in the summer it is often restricted to spoil in shaded areas. Crenulated flapwort *Solenostoma gracillimum* is the only frequent associate on the Isle of Man.

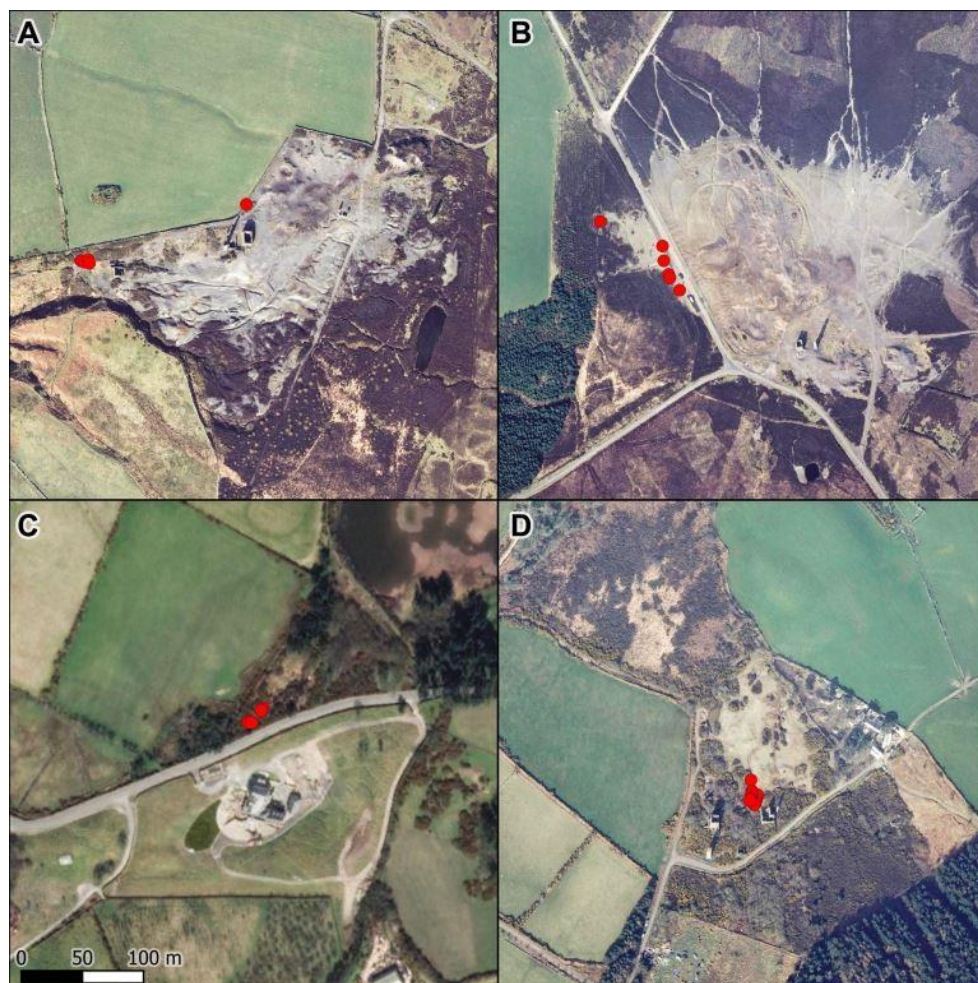
Manx Distribution

Table 1. shows the historic records of lead moss for the Isle of Man.

Table 1 Historic records of lead moss

Sample Recorders	Sample Location Name	Sample Date	Sample Spatial Reference	Survey Name
J. Hunter	Foxdale,river	30/09/1914	SC27	British Bryological Society
M.J. Wigginton	Foxdale	31/07/1978	SC285778	British Bryological Society
J. Hunter	Foxdale	31/12/1914	SC27	British Bryological Society
J.A. Paton	Laxey Glen, old mine at head of	13/04/1968	SC48	British Bryological Society
J.A. Paton	Head of Laxey Glen	13/04/1968	SC4087	British Bryological Society
J.A. Paton	Ramsey,Ballure Glen	19/04/1968	SC49	British Bryological Society
J.A. Paton	Foxdale,old mines E of	21/04/1968	SC27	British Bryological Society
J.A. Paton	Ballure Glen	31/12/1968	SC49	British Bryological Society
J.A. Paton	Laxey Glen	31/12/1968	SC48	British Bryological Society
J.A. Paton	Foxdale	31/12/1968	SC27	British Bryological Society

Dr Des Callaghan, an expert bryologist, was contracted by DEFA in March 2022 to survey all known and potential sites for lead moss and other metalliferous specialist bryophytes. Dr Callaghan recorded lead moss at four discrete sites (see Map 1)¹.



Map 1 Lead Moss Locations: A – Beckwiths, B – Cross Vein, C – Louisa, D – Cornelly

¹ Callaghan, D. A. & Samson, L. (December 2022) Population status and ecology of the globally threatened moss *Ditrichum plumbicola* Crundw. on the Isle of Man. *Journal of Bryology*.

Manx Distribution

Lead moss has been lost from three of its former locations:

- Ballure Glen most likely through afforestation
- Snaefell mines (head of Laxey mines) most likely due to recreational motorbike activity
- Upper old Foxdale mine (next to river) most likely due to development

Distribution



Found only in Britain and Germany, lead moss's UK range includes north and mid-Wales, the Isle of Man, western Scotland, northern south-western England and the Republic of Ireland.

Legal protection

- No legal protection.
- The JNCC Guidelines for a SSSI selection for bryophytes² states examples of assemblages that do not meet the threshold but which are considered important for another reason – e.g. representing the edge of the range of the assemblage, or holding a significant abundance of representative species – should be considered for notification, if not selected on habitat grounds.

Threats

- Development
- Colonisation/out competed by other plants
- Climate change
- Capping
- Motorbike/vehicle activity

Aims

- Establish current population and range
- Monitor and maintain the current population and range
- Expand the current range through natural re-colonisation and landscape enhancement in suitable areas
- Translocation to former sites

² Bosanquet, S.D.S., Genney, D.R. and Cox, J.H.S. 2018. Guidelines for the Selection of Biological SSSIs. Part 2: Detailed Guidelines for Habitats and Species Groups. Chapter 12 Bryophytes. Joint Nature Conservation Committee, Peterborough
Lead Moss July 2023 Louise Samson

Linked BAPS

Habitats

- Urban and Industrial
- Dry dwarf shrub heath

Delivery Options	Active	Challenges
○ Establish baseline	Yes – Achieved in Mar 2022	
○ Monitor all existing known sites	No monitoring programmed established	Resources
○ Add lead moss to Schedule 7 <i>Plants which are Protected</i> of the Wildlife Act 1990	No	Resources Requires political support
○ Create ASSI designation criteria or adopt the JNCC SSSI designation criteria to enable the designation of significant bryophyte sites.	No	Resources Requires political support
○ Designate all known sites Wildlife Sites	No	Resources
○ Monitor and make representations to planning applications	Yes	
○ Annual review and update of this document	By 15/3/2024	
○ Deliver a project to re-establish lead moss at Snaefell mines by fencing off an area of suitable habitat and translocating lead moss from sites with the highest abundance. Could be delivered by WFOM	No – MWT Project?	Resources
○ Scrub control at Cornelly and Louisa mines	No – MWT Project?	Resources/landowner agreement