

## Back from the Brink – Species summary

### Cornish Path-Moss

BftB project: SP05 Cornish Path-Moss Species Recovery Project

Project lead organisation: Plantlife

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Species name – common & scientific	Cornish path-moss ( <i>Ditrichum cornubicum</i> )
Photograph	 <p data-bbox="740 1267 1177 1296">© Des Callaghan / Back from the Brink</p>
Taxon group	Bryophytes, moss
Conservation status	Endangered, S41
UK distribution	Nationally rare, two extant sites: Crow's Nest/South Caradon Mine and Phoenix United Mine, Minions, Cornwall.
Habitat associations	Bare, metal-rich (copper and lead as well as arsenic and cobalt) mine spoil, one of a suite of metallophyte mosses and liverworts showing similar habitat preferences including species of <i>Cephaloziella</i> , S41 / annex 1 habitat calaminarian grassland.

<b>BftB work carried out:</b>	
<b>Survey &amp; Monitoring</b>	Detailed surveys of distribution of Cornish path-moss at known and former sites as well as of areas of suitable habitat at Crow's Nest and Phoenix and monitoring of distribution and abundance within trial management plots following replicable survey methodology at Phoenix United Mine during Jan 2018, Jan 2020 and Nov 2020. Survey of five potential 'new' sites for Cornish path-moss including four sites near to Crow's Nest and Geevor Mine during Nov 2020. Survey of habitat created in June 2021 undertaken in November 2021.
<b>Sites habitat management works</b>	526m <sup>2</sup> of new habitat created for Cornish path-moss.
<b>Conservation 'interventions' incl. reintroductions &amp; translocations</b>	Initial <i>in vitro</i> cultivation trials successfully undertaken to confirm viability of cryogenically frozen Cornish path-moss by RBG Kew.
<b>Technical advice provision</b>	Two specialist H&S reports commissioned – findings disseminated to relevant agencies and other interested parties and implemented as part of the habitat creation undertaken in June 2021. Actions proposed following workshop and circulated as to how work can be safely undertaken in the future.
<b>Links made with other taxa / conservation work?</b>	Contact made with conservation bodies working on Cornish path-moss in Ireland – information gathered and lessons learned from the project have been shared. Contact made with Cornwall Mining World Heritage Site and initial discussions held around potential further project looking at potential of sites within the WHS for metallophytes and the importance of the Cornish post industrial mining landscape for nature conservation.
<b>Wider engagement &amp; advocacy activities?</b>	Low level engagement was undertaken with art students at Falmouth University and local bryologists but this work came to an end with the advent of the COVID-19 pandemic. A workshop was successfully held with interested parties (agencies, academics, H&S practitioners, archaeologists and site managers) toward the end of the project to disseminate information, share lessons learned and plan a future for Cornish path-moss.
<b>BftB results obtained:</b>	
<b>Recorded Distribution (in BftB focal areas)</b>	Cornish path-moss remains extant at two UK sites: Phoenix United Mine and Crow's Nest/South Caradon Mine near Minions. Surveys of potential 'new' sites (see above) have not, so far, revealed any further populations of Cornish path-moss.

<p><b>Recorded Abundance of species populations</b></p>	<p>2018 monitoring of 2015 trial habitat management plots at the Phoenix United Mine site showed a 20-fold increase in the occurrence of Cornish path-moss (believed at the time to represent a four-fold increase in the world distribution of the species). Subsequent survey following the same methodology showed a 93% decline in the absence of further disturbance within trial plots at Phoenix. There was some significant increase in populations <i>outside</i> management plots potentially attributable to natural seasonal fluctuation, but this explanation is unconfirmed. Cornish path-moss occupied more 10cm grid cells across both sites in 2020 than at the start of the project (725 vs 561), the increase outside of management plots responsible for this. This does not include monitoring of the plots managed in June 2021, and this monitoring needs to be repeated in the next year or two to account for this.</p>
<p><b>Other results documented?</b></p>	<p>A series of quadrats were taken to gather data on associate species and fixed-point quadrats have been established to enable detailed future monitoring within and without management plots. A series of fixed point photographs are included within reports providing comparisons of on site conditions throughout the period 2015-2020.</p>
<p><b>Species Recovery Curve progress made</b></p>	<p>Baseline score at start of project: 2 Estimated score at project end: 6 (Progress made: 4 points)</p>
<p><b>Other measures of species recovery progress? e.g. FCS</b></p>	<p>n/a</p>
<p><b>Recommendations for future work:-</b></p>	<p>An outcomes and actions document has been prepared following a workshop held at the end of the project and will be circulated to all attendees before the project end.</p> <p>This document sets out primary and secondary actions and should be referred to for detail.</p> <p>An appropriate organisation needs to be confirmed to take responsibility for progressing this future work.</p> <p>The profile of Cornish path-moss and the importance of the Cornish post industrial mining landscape for metallophytes should continue to be raised and included as a priority within the Local Nature Recovery Strategy in Cornwall.</p> <p>Cornwall Mining World Heritage Site have expressed an interest in convening a project to investigate and focus on the potential value of a number of mine sites within the WHS for metallophyte species. This could include surveying, habitat management work and potentially future reintroduction of Cornish path-moss. WHS would be in a position to act as a convener of such a project but would be looking to partner with others including agencies (NE, HE) and conservation bodies (such as Plantlife). Realising this proposal would be contingent upon the findings of an initial feasibility study and securing adequate funding.</p>