the species recovery trust

2021 Species Report

Marsh Clubmoss
(Southern England)

The 2021 work programme was generously funded by Natural England, The Halpin Trust and the Banister Charitable Trust

Partners

This report has been produced as a collaboration between The Species Recovery Trust (Dominic Price, & Holly Stanworth), Surrey Wildlife Trust (Ben Habgood), Hampshire & Isle of Wight Wildlife Trust (David Boddy), the MOD (Sarah Jupp), Natural England (James Giles), Forestry England (Leanne Sargeant, Mark Warn) and the National Trust.

Particular thanks go to Natural England for their financial support of this project in 2021.

Scope of report

This report focusses on our work in Surrey, Hampshire, Dorset & Devon in 2021.

Summary

This report lays out the current status of Marsh Clubmoss *Lycopodiella inundata* in Dorset, Devon & the South-east.

The species continues to suffer declines across many sites in the South-east. In the South-west the situation is slightly better with many populations stable and increasing, however declines and losses are still being recorded in many sites.

Scrapes are no longer a recommended management technique for this species. Disturbance through grazing & heavy vehicle tracking are effective in providing suitable habitat.

Introduction

The Species Recovery Trust are a charity devoted to saving some of Britain's most endangered species. One of our target plant species is Marsh Clubmoss *Lycopodiella inundata* which is severely under threat in the South-east of England and under moderate threat in the South-west.

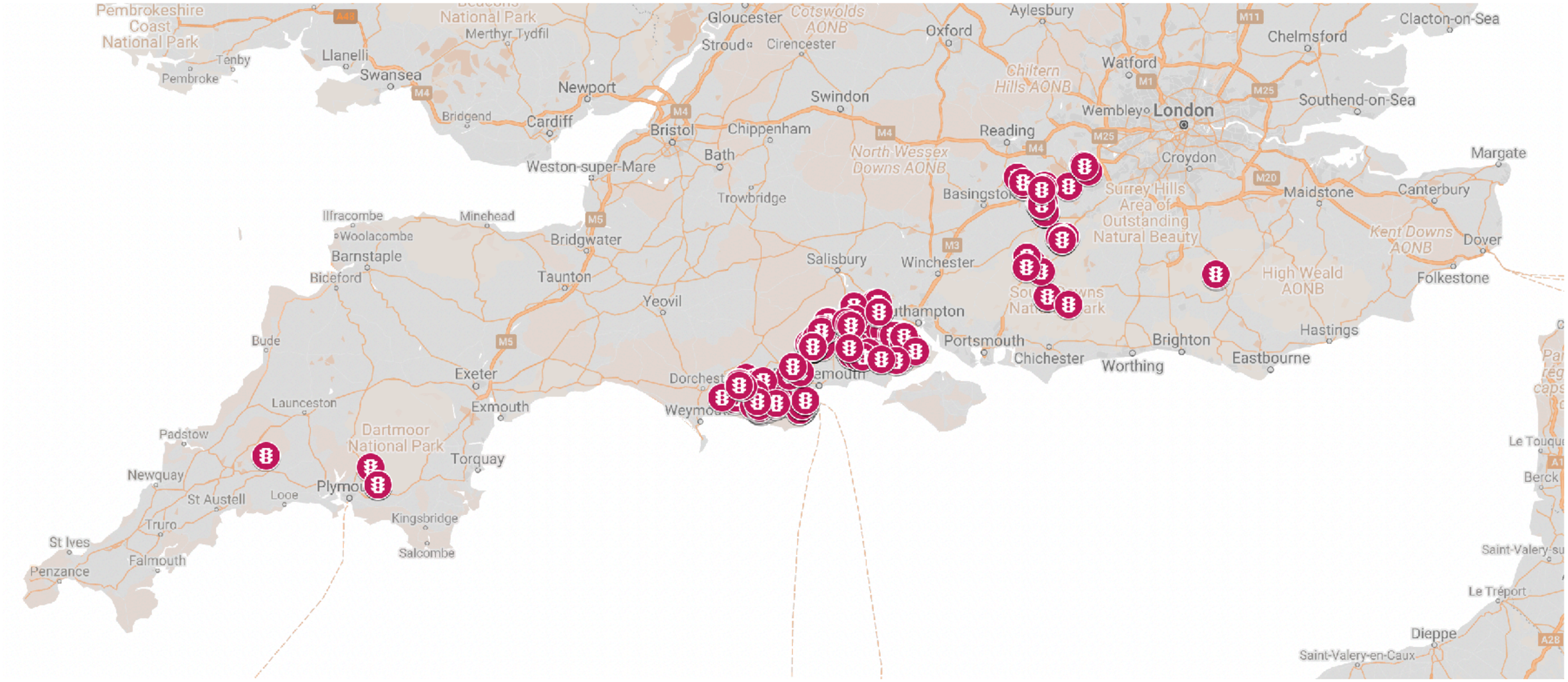
Site surveys were completed across the South of England in 2021, and these complement a detailed data set from 2020. Our overall concern now is that elevated levels of atmospheric nitrogen, of which some is associated with air traffic overhead, along with global warming may be impacting upon the South-east sites. Our national monitoring programme has seen populations in Cumbria and Cornwall reaching huge proportions, whereas in the South-east, even when the habitat conditions appear relatively good, populations continue to be small and / or declining.

Marsh Clubmoss is an indicator species of healthy damp heath and mire ecosystems, and it is vital to keep monitoring these populations and taking measures where necessary to save them from becoming extinct in the region.

Sites Summary

Dorset Heaths & Devon Site Information	
Site	**Number of sub-sites**
Dorset Heaths	90
Devon	8

South-east Site Information					
Site	**Number of sub-sites**	**Plant counts in 2018**	**Plant counts in 2019**	**Plant counts in 2020**	**Plant counts in 2021**
Thursley & Ockley Commons, Surrey	13	1800	Not all sites surveyed	No data	6443
Chobham Common, Surrey (6 sub-sites)	6	298	104	441	427
Hawley, Surrey	4	112	No data	118	No data
Woolmer Forest, Hampshire	5	777	No data	6730	No data



Dorset Heaths

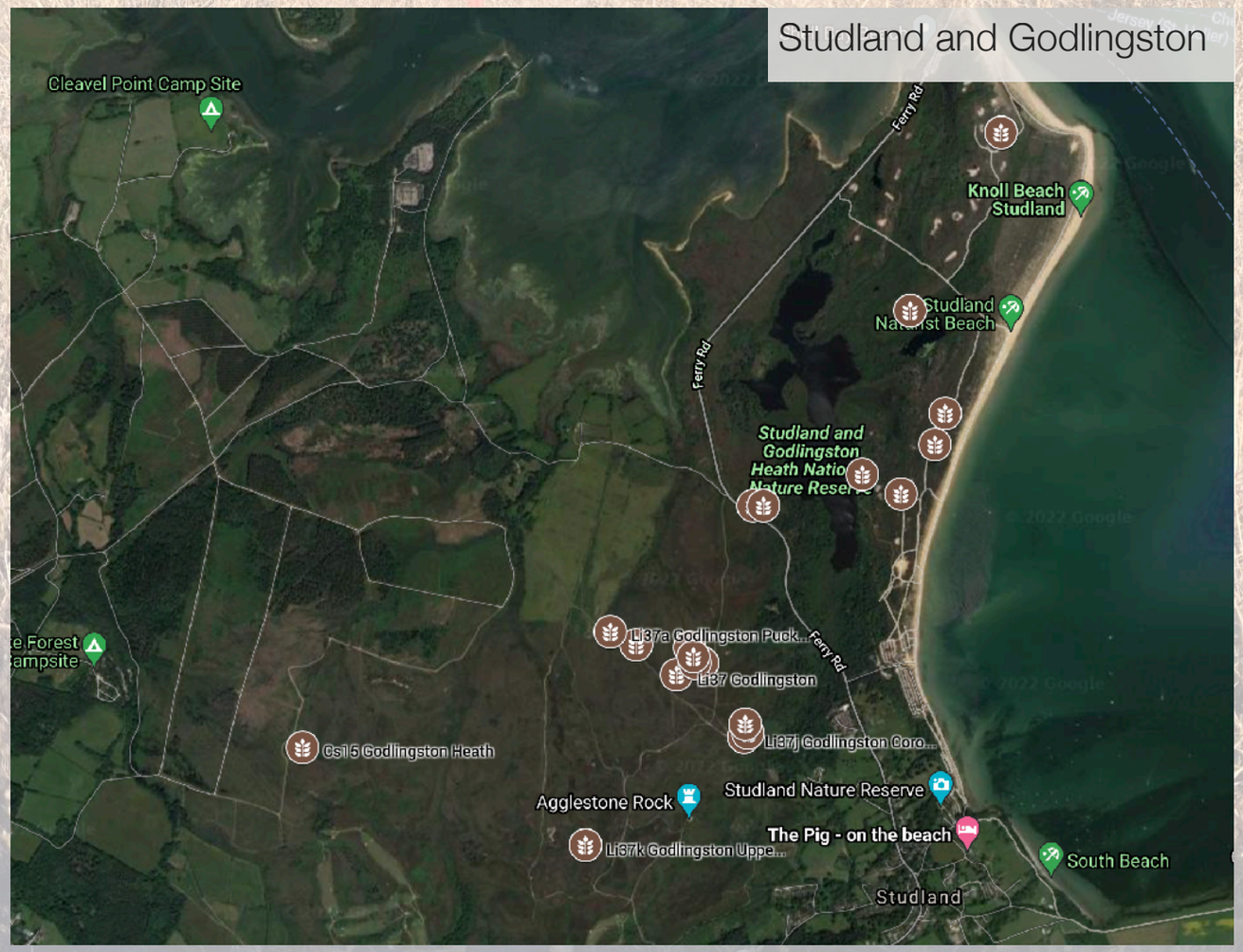
In 2021 we re-surveyed 74 Clubmoss sites on the Dorset Heaths, encompassing all the sites not on MOD land (these were last surveyed in 2018/19 and involve complicated access arrangements).

Overall the species is doing well in Dorset, but its range is continuing to contract, with further losses from the Canford/Ringwood populations. However, some record counts were measured from the stronghold areas, in particular at Holt Heath and in the Studland/Godlingston bog complexes.

Site data is in the process of being distributed to landowners/managers to advise them on the success or otherwise of their work.

Holt Heath

Hyde Bog



Studland and Godlingston

Dorset Heaths - Meta-populations

Survey effort this year focussed particularly on three meta-populations outside of the MOD estate (the fourth includes the meta-population at Lulworth/Povington within the MOD estate).

These areas represent particular interest for the species as the landscape allows for dynamic population development with management facilitating the movement of plant propagules and allowing colonisation of new sub-sites. In the case of Holt Heath and Studland/Godlingston, this is through conservation grazing and at Hyde Bog it is through a combination of forestry operations, and possibly wild populations of deer or even walkers using the tracks.

Dorset Heaths - Ringwood Forest

During the 2021 surveys it was discovered that a site on Forestry England (FE) managed land, at Ringwood Forest, had been accidentally destroyed during ditch works. Four plants were found on the edge of the spoil, from a previous count of 89. Unfortunately it appears FE were unaware of the location of the site as they have been actively looking after other sites in the Dorset Heaths (Hyde Bog).

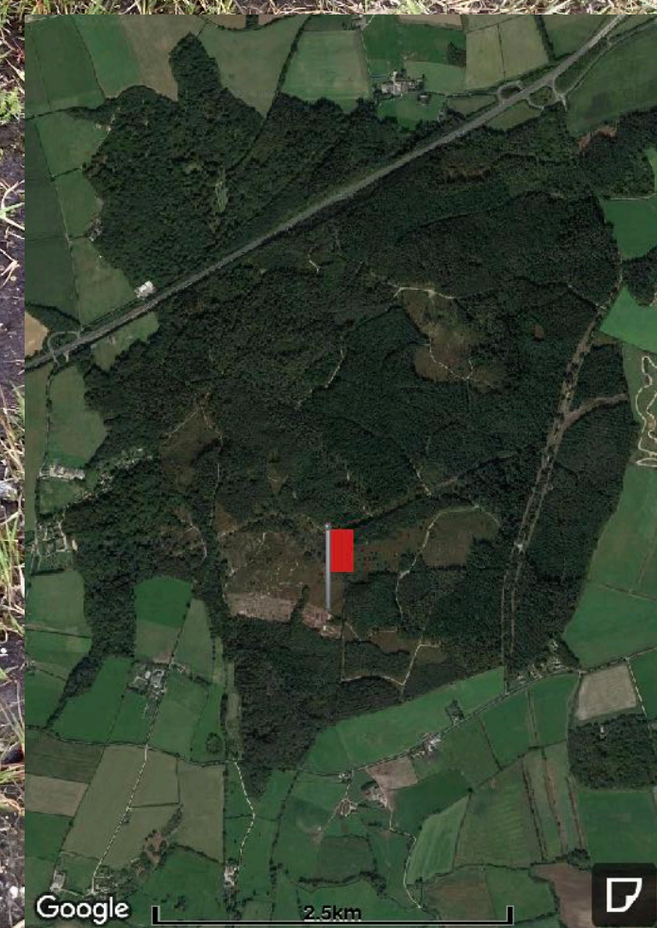
The ditch works appeared to have been undertaken approximately 2 years ago, showing the immense importance of keeping a watching brief on all sites.

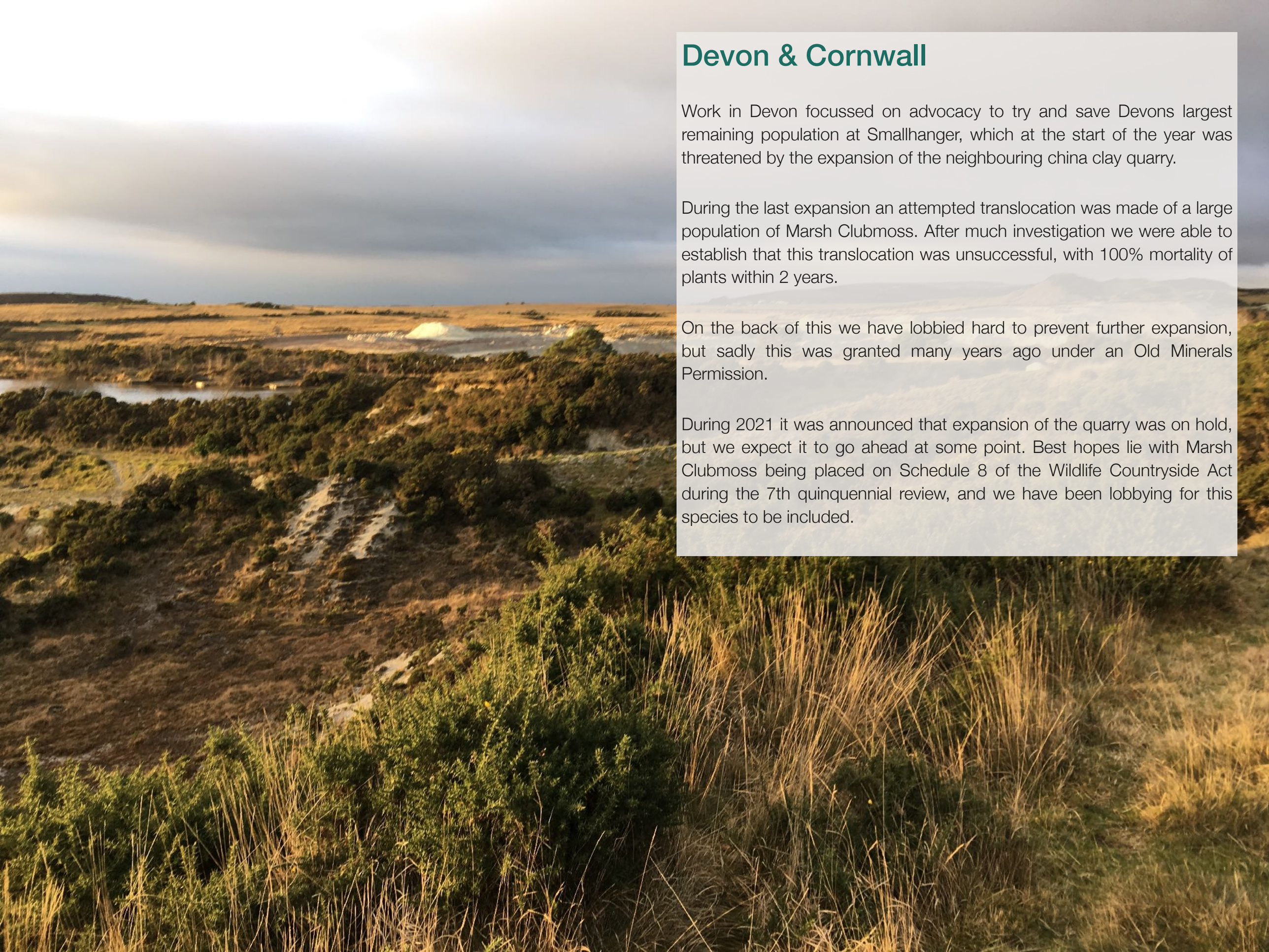
In December attempts were made to scrape off the spoil heap and reinstate a similar draining regime to what had been present before, and we will closely monitor this site to see if the population recovers.

Dorset Heaths - Duddle Heath

Towards the end of 2021 a report was submitted by one of our volunteers, documenting a new site for Marsh Clubmoss. This was discovered during a college field trip, and the photos clearly show Marsh Clubmoss. This is a staggering find, being located far from any other known populations and in an area where no plants have been recored in known history. Management advise has been provided and the site is now under the care of the owners and site managers.

Apart from filling in a large gap on the map, this find gives great hope that there may be other sites where the species has yet to be discovered.





Devon & Cornwall

Work in Devon focussed on advocacy to try and save Devons largest remaining population at Smallhanger, which at the start of the year was threatened by the expansion of the neighbouring china clay quarry.

During the last expansion an attempted translocation was made of a large population of Marsh Clubmoss. After much investigation we were able to establish that this translocation was unsuccessful, with 100% mortality of plants within 2 years.

On the back of this we have lobbied hard to prevent further expansion, but sadly this was granted many years ago under an Old Minerals Permission.

During 2021 it was announced that expansion of the quarry was on hold, but we expect it to go ahead at some point. Best hopes lie with Marsh Clubmoss being placed on Schedule 8 of the Wildlife Countryside Act during the 7th quinquennial review, and we have been lobbying for this species to be included.

Thursley and Ockley Commons

Thirteen sub-sites at Thursley & Ockley Commons have been found to support Marsh Clubmoss. One of these is a new record for 2021 (Li53k), and another two were discovered in 2018 (Li53).

As supported by the data, the overall population here is stable and increasing, with 2021 being the highest count in our records (6443 plants). The greatest increase has been observed in sub-community Li53f - Li53j, whereby the population has increased four-fold from 2018 to 2021. We've also seen the population at the north of the site (Li53b) double during this time period.

Populations of Clubmoss Recorded at Thursley & Ockley Commons in 2021		
Site Name	**Grid Ref**	**2021 Count**
Li53 Thursley Pond Track	SU 90114 41314	146 plants
Li53 Thursley Pond Track B	SU 90156 41359	167 plants
Li53a Thursley Northern Track	SU 91155 42061	6 plants
Li53b Thursley Keyhole	SU 91140 42064	484 plants
Li53c Thursley Linear Scrape	SU 90227 41747	10 plants
Li53d Thursley Old Trackway	SU 90220 41730	0 plants
Li53e Thursley Boardwalk	SU 90100 412221	N/A
Li53f Thursley Hammerhead	SU 90226 40826	3500 plants
Li53g Thursley Bushy Creek	SU 90293 40829	2 plants
Li53h Thursley Eastern Scrape Extension	SU 90277 40830	61 plants
Li53i Thursley South of Strip	SU 90254 40818	1128 plants
Li53j Thursley Wide Scrape	SU 90301 40846	907 plants
Li53k Thursley Round Pond	SU90064 40908	32 plants

Thursley and Ockley Commons (cont.)

Most sub-sites have seen a steady increase in numbers since 2014, however there have been declines at two of the sub-sites where habitats have become less suitable. Li53d supported approximately 1000 plants in 2011, however by 2017 the habitats here had overgrown and no plants were found. This continued to be the case in 2021, however suggested management works have been recommended (see below), aiming to re-establish a population, whether that be from dormant spores or natural migration of spores from the nearby population Li53c. A similar situation has been observed at Li53e, which supported 70 plants in 2011, and were found to be lost by 2017. In both cases the suitable bare substrate had been replaced by *Sphagnum* sp., *Molinia caerulea*, *Erica tetralix* & *Calluna vulgaris*.

This species is clearly extremely vulnerable to habitat loss, and a number of recommendations have been made to ensure this important population is maintained into the future. Currently, the main management regime employed at Thursley has been sporadic and low-key cattle grazing, which appears to be beneficial & optimal. Historically, scrapes were created in close proximity to existing sub-sites and colonisation of these have been slow or have failed. With this in mind, as well as data from other sites across the country, we have concluded that creation of scrapes removes vital elements which are integral to the plants survival. As such, we now recommend creation of disturbance, in the form of low-key, sporadic grazing and/or tracking of heavy vehicles over and around the habitat to create structural variation on the ground. This has been shown to be successful on many sites, and is thought to mimic large herbivore action that would have maintained these populations in the past.

A number of management recommendations have been provided to the landowners of the site, which generally entail continuation of grazing, but where this may not be possible, light scrub clearance and heavy vehicle tracking has been recommended. A separate report for this site has been compiled and can be made available on request.

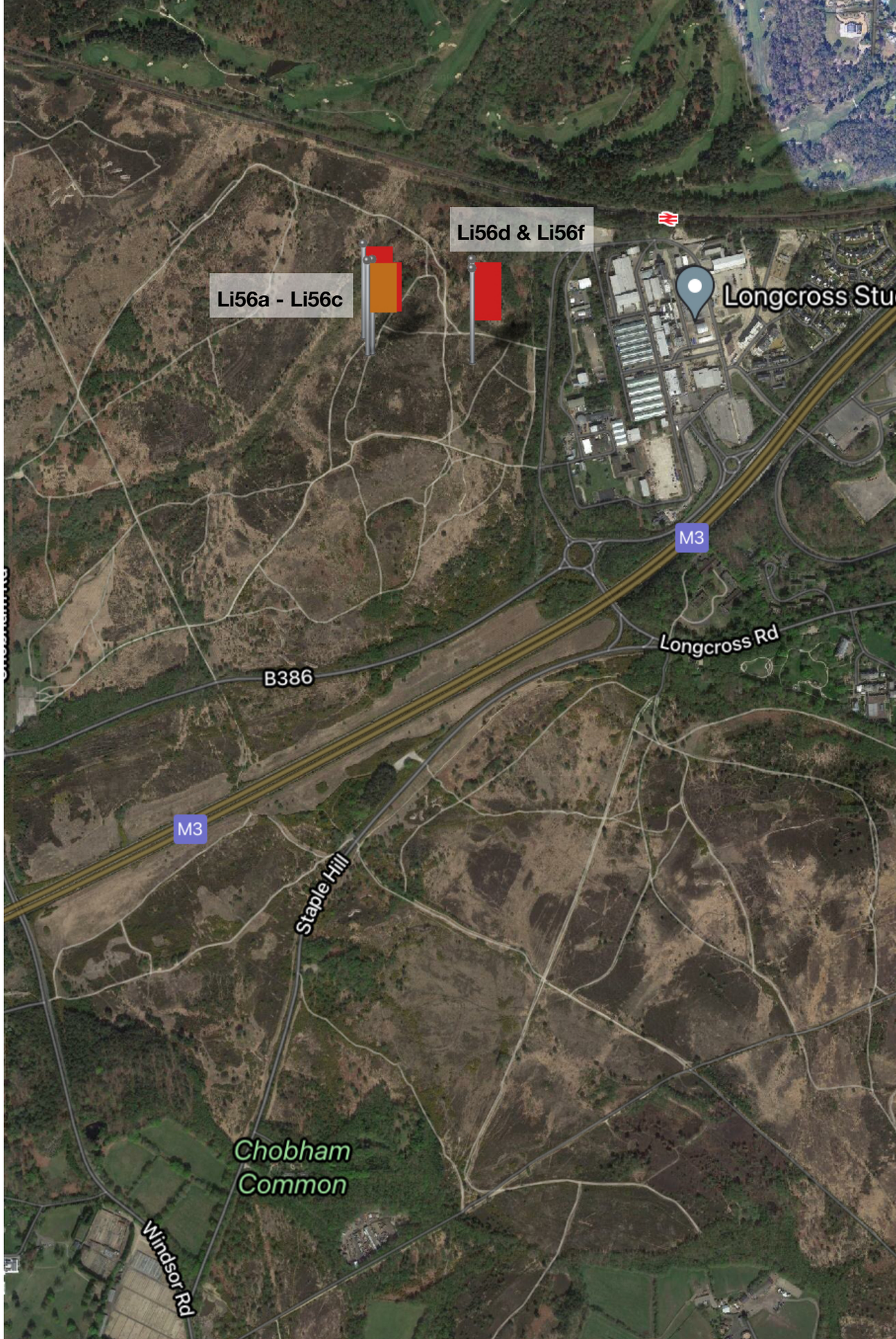
Chobham Common

Chobham Common is home to six sub-sites, five to the north of the M3 and one to the south. The population at the southern-most site is however likely to be extinct site as no plants have been identified there since 2018 when the population was down to 3 (2 previously in 2014).

Until 2020, five sub-sites had been monitored since 2014, and in 2020 a large area of birch & pine scrub was cleared just south of Li56d. This opened up the area for searching and a new sub-site was identified (Li56f) along an old trackway. In 2020, 220 plants were counted here, with 246 counted in 2021.

Sadly, the track in close proximity to this (Li56d) has lost the majority of its plants from 205 recorded in 2014, with a steady decrease despite the presence of suitable habitat, to only 1 plant in 2021. Vehicle tracking (see below) was employed in winter 2020 to try and provide some disturbance and structural variation on the ground without removing vital key elements.

Populations of Clubmoss Recorded at Chobham Common in 2021		
Site Name	**Grid Ref**	**2021 Count**
Li56a Chobham Common	SU 97238 65794	52 plants
Li56b Chobham Common	SU 97247 65759	54 plants
Li56c Chobham Common	SU 97259 65762	74 plants
Li56d Chobham Common	SU 97477 65765	1 plant
Li56f Chobham Common	SU 98564 63955	246 plants



Chobham Common (cont.)

Li56a, b & c lie within a wetter area of heath, where scrapes were created in the 00's to open up much needed bare ground. As we're seeing with many of the scrapes, these have not been colonised by Marsh Clubmoss and most plants are located surrounding the edges of them. Habitats in this area are sub-optimal, and tend to be quite well vegetated which is hemming the plants into quite small areas of ground. We've seen a steady increase at Li56a, with 10 plants found in 2018 to 52 plants in 2021. Li56b has seen a huge decline with 650 plants in 2015, and only 54 in 2021. Finally there's been fluctuations at Li56c (potentially due to inundation misleading figures) but again we're seeing a decline here, from 214 in 2018 down to 74 in 2021.

During winter 2020, a work party was organised with Surrey Wildlife Trust to remove scrub from the area surrounding Li56a, b & c. Some light mattocking was also undertaken around these populations in an attempt to push back encroaching *Calluna vulgaris* & *Erica tetralix,* and to create some light disturbance.

In addition the populations to the east were subjected to some track maintenance, whereby a 4x4 was used to open up the old trackways, create some bare ground & aid spore dispersal.

Unfortunately we've experienced quite a steep decline of Marsh Clubmoss on Chobham Common, with earlier records showing much higher numbers than more recently.

Hawley Common

Hawley Common lies in the northern extent of Hampshire and has historically been home to four sub-sites of Marsh Clubmoss. This has now reduced to two sub-sites, with likely extinctions seen at Li46E & LiS18 where no records have been made since 2013.

Sub-site Li46 continues to persist, but this site has also seen quite drastic declines. Once in the low thousands, there is now less than 100 plants remaining along an old track which is slowly being encroached by surrounding vegetation. Li46b has increased in numbers, but still remains quite vulnerable. Five plants were counted in 2015, and this has now risen to 31 plants in 2021.

Declines are thought to be linked to habitat degradation, air pollution & potentially global warming causing drier conditions. Management is proposed for Feb/March 2022, whereby scrub removal, disturbance and compaction will be undertaken in an attempt to open up the areas & create more optimal conditions. A 2020 report for the Rushmoor area which encompasses Hawley can be made available on request.

Populations of Clubmoss Recorded at Hawley in 2020/21

Site Name	Grid Ref	2020 Count
Li46 Hawley r	SU 8361 5804	87 plants with strobili
Li46b Hawley	SU 83650 57989	31 plants with strobili

Woolmer Forest & The Slab

Five sub-sites at Woolmer Forest have been found to support Marsh Clubmoss. Extant populations were found at all but one (Li44) in 2020, and management works have been undertaken on those areas managed by Hampshire & Isle of Wight (H&IoW) Wildlife Trust (Li43b & Li43d).

Similarly with Thursley, the two main populations (Li43a & Li43d) appear to be stable and increasing. Li43a lies on a broad, mown heathy track over a distance of 125m. It is frequent over most of this distance and in 2018 the colony was found to support 477 plants, and in 2020 3,800 plants were counted. This track is relatively well-used by vehicles, which have created shallow and deep ruts, bare ground & have likely helped spread spores via their tracks / wheels.

The second largest population on Woolmer is Li43d, which again, occurs along a mown, heathy track. In 2020, 2800 plants were recorded along a 46m stretch, growing within the damp ruts created by vehicles, and also alongside mown *Molinia*.

Li44b is a continuation of the track that supports Li43a. In 2020, 130 plants were found across 93m in 4 distinct areas, within areas of damp, disturbed ground.

Populations of Clubmoss Recorded at Woolmer Forest and The Slab in 2020

Site Name	Grid Ref	2020/21 Count
Li43a Woolmer Forest	SU 79526 32746	2020: Approximately 3,800
Li43b Woolmer Forest	SU 80051 33294	2021: 92 plants
Li43d Woolmer Forest	SU 81300 32000	2020: Approximately 2800 plants
Li44 The Slab Bordon	SU 7952 3281	0 plants recorded
Li44b The Slab Bordon	SU 79546 32858 - SU 79561 32880	2020: 130 plants
Li44c The Slab Bordon	SU 7814 3497	0 plants recorded

Woolmer Forest (cont.)

Despite concerted efforts to re-find the population at The Slab (Li44c), no plants have been recorded here in recent years. A small population of 46 plants were recorded in 2010, but lack of habitat management has likely resulted in these being lost as no plants were found during surveys in 2018 & 2020.

Management

In September 2021, management was undertaken at sub-sites Li43b & Li43d, managed by H&IoW Wildlife Trust. This entailed tracking a digger alongside & over the populations to open up ground, spread spores & create ruts where possible. There is a delicate balance to be had with this work, and fortunately the conditions allowed successful creation of disturbed ground.

Further management works have been proposed at sub-sites Li44, Li43a & Li44b and we hope to complete this in the next 5 years.

Looking forward

Project aims 2021-2030

- Continue to monitor all SE sites on annual basis & SW sites on rolling 3-year programme
- Monitor the effects of compression & disturbance as opposed to creation of scrapes
- Look more closely into why the SE is seeing greater declines - particularly in association with pollution & habitat degradation
- Continue lobbying to save Smallhanger
- Arrange access and survey Cornwall sites

The Species Recovery Trust is a charity set up to tackle the loss of some of the rarest species in the UK.

There are over nine hundred native species in the UK that are classed as under threat, with several hundreds more currently widespread but known to be in significant decline. The countryside is now bereft of many species that were a familiar sight a mere generation ago.

A small number of these species are on the absolute brink of existence, poised to become extinct in our lifetimes; our goal is to stop them vanishing.

Our aim is to remove 50 species from the edge of extinction in the UK by the year 2050. In addition we are reconnecting people with wildlife and the natural world through training programmes and awareness raising.









the species recovery trust

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