



Filling the gaps: the Lobarion survey

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The British Lichen Society

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Welcome to the British Lichen Society

The British Lichen Society welcomes all who are interested in lichens, whether you are a complete beginner or someone with a life-time's experience of lichenology. Throughout the world, but with a special emphasis on the British Isles, our aims are:

- to promote and advance the teaching and study of lichens;
- to encourage and actively support the conservation of lichens and their habitats;
- to raise public awareness of the beauty of lichens and of their importance as indicators of the health of our environment.

We work towards these aims through field meetings, workshops and recording projects. Our Bulletin is packed with information about lichens, lichenologists and events, and we also publish a highly regarded scientific journal, The Lichenologist.



600 members, 350 in the UK

... of those, only about 100 are active in the society, on committees, acting as local contacts or attending workshops and field meetings

..... of those, only about 20 regularly submit records to the BLS database

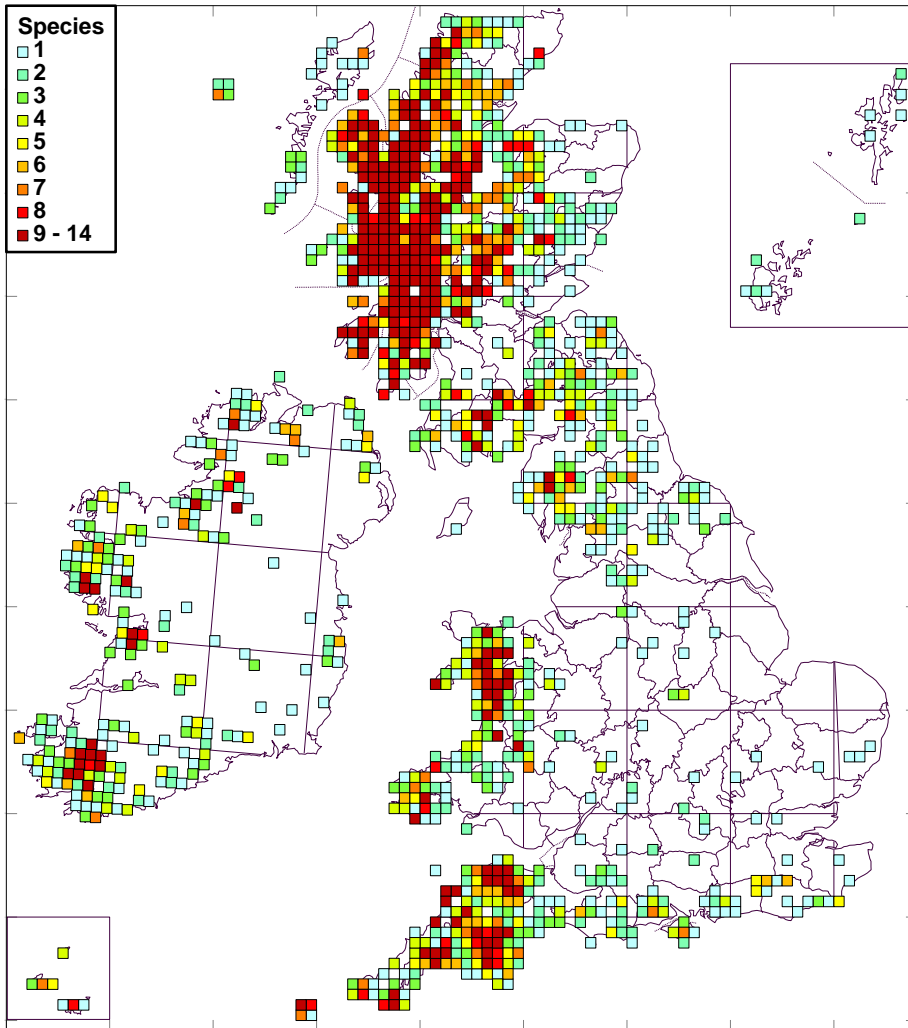
Involving more members and local groups in recording projects could help to build confidence and expertise in recording

The Lobarion



Lobaria pulmonaria (lungwort) and *Peltigera horizontalis* in Redesdale, Northumberland

The Lobarion



An epiphytic community of lichens and bryophytes found on mature trees in western Europe

Dominated by large leafy lichens, including species of *Lobaria*, *Sticta*, *Pseudocyphellaria* and *Nephroma*

Needs light and moisture

Sensitive to atmospheric pollutants and acidification

Some lichens of the Lobarion



Lobaria pulmonaria
L. virens

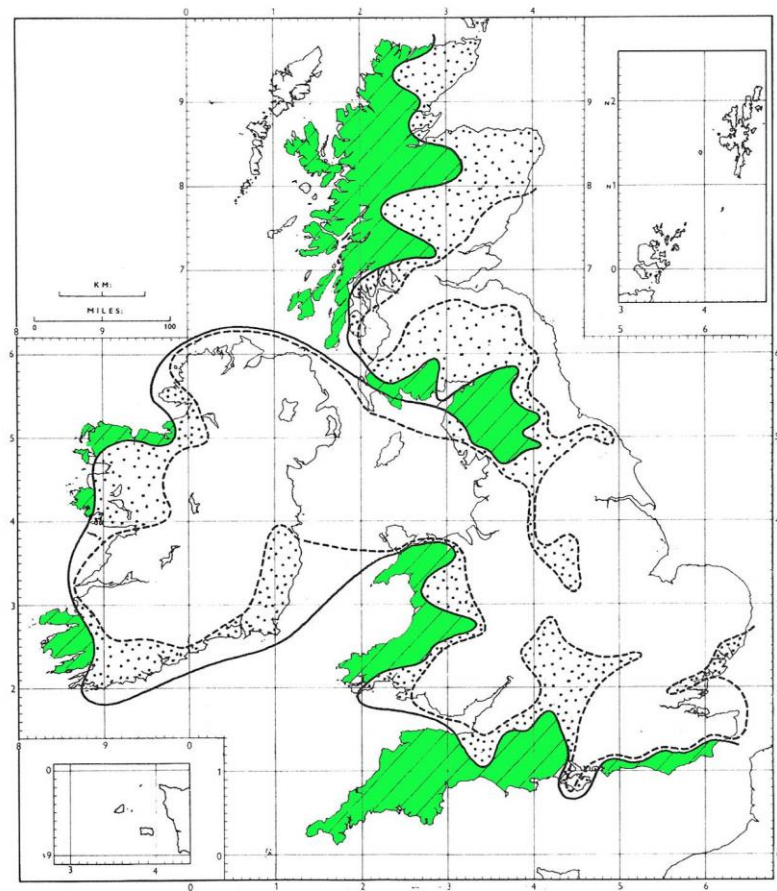
L. amplissima
Sticta fuliginosa
L. scrobiculata

Lobaria pulmonaria

English name: lungwort

The most common British *Lobaria*

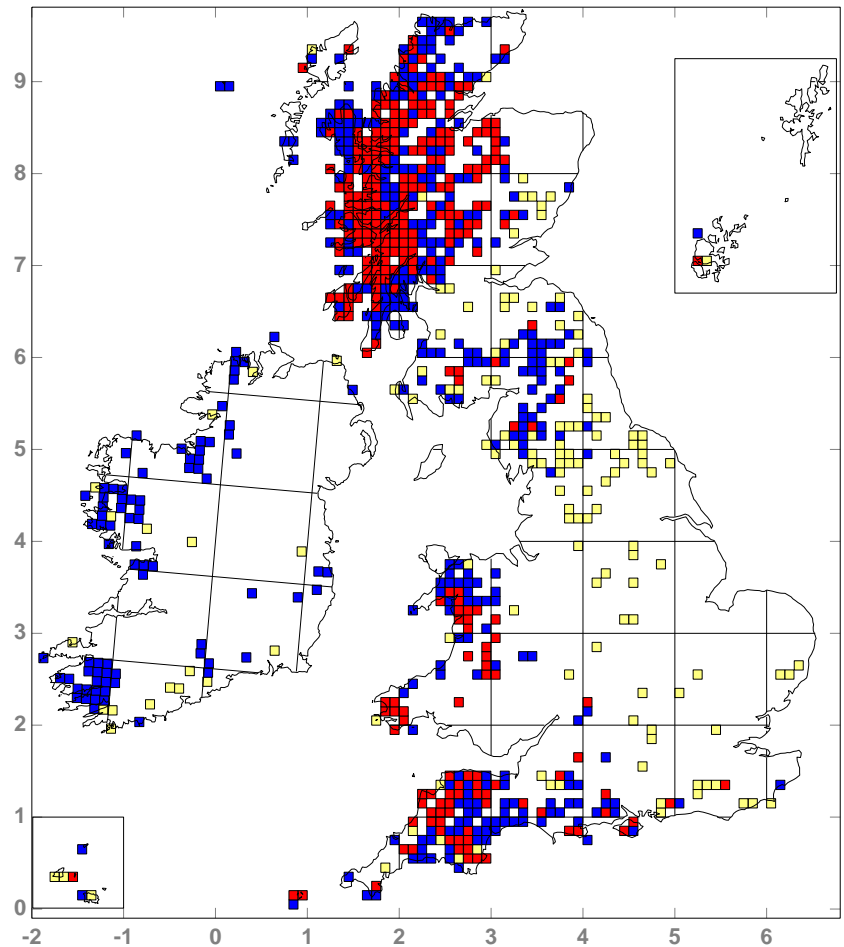




Shaded - c.1850

Green - 1973

Lobaria pulmonaria



Yellow 1650 - 1959

Blue 1960 - 1999

Red 2000 - 2015

The Lobarion

Once widespread as the climax community associated with old oak forest

Still doing well in western Scotland

Relict populations remain
in England and Wales

We suspected that many of
these were threatened or had
already been lost, but didn't
know -

WE NEEDED A SURVEY



The only *Lobaria amplissima* in Northumberland

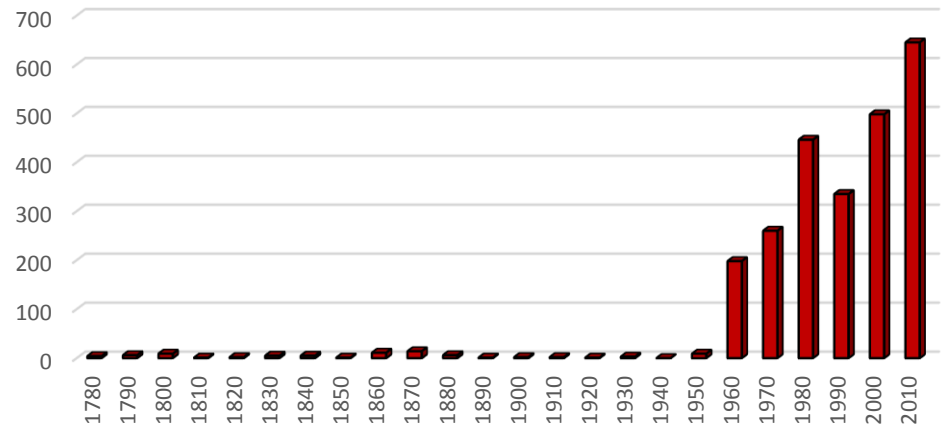
Why so many gaps in the data?

Recording fashions have changed

Older records have little detail

Modern records were mostly for a few well-known sites

Lobaria records in England and Wales



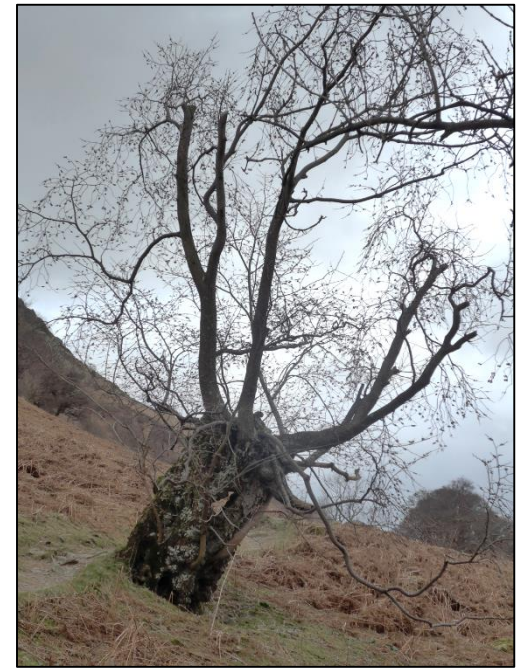
Absence of records is not necessarily a record of absence

- How many of the sites recorded in the past been revisited with nothing found?
- If visited, were lichenologists looking for the *Lobaria* or for something else?
- Did they know where to look?
- If they found it, did they send in their records?
- Did they record associated species or just *Lobaria*?

Where to find the lobarion now

Remnant populations on old trees

In the oceanic west also in woods, on rocks and even in maritime heath



Lobarion survey objectives

To involve BLS members and local groups

To find out

- How many of the Lobarion communities known in the 1960s-1980s are still present
- Whether these relict populations are in good condition or declining
- Current and potential threats (including the loss of ash as a host)

To fill the gaps in the BLS database, with full species lists and details of abundance and host trees



Approach to the project

Restricted to England and Wales

Two years of field work, followed by data analysis and reporting

Funding to help with expenses provided by Natural England

Standard form-based method to record

- species found during previous surveys
- *Lobaria* and associated species found
- the number of trees the species occurred on
- positive and negative indicator species
- environmental conditions.



Not so simple after all....

Recording over the first two years was very patchy

- Only experienced surveyors were confident to identify the Lobarion species, even the less common species of *Lobaria*
- Lichenologists are busy people, and are reluctant to travel out of their usual areas
- Some surveyors were keen to visit sites but reluctant to follow the survey methodology

WE NEEDED A WORKSHOP MEETING



Lobarion Workshop in Cumbria, 2014

Residential long weekend

- accommodation (but not travel) paid
- limited to 12 participants
- attendance by invitation only
- an area where very little lichen recording has been done for the last 20 years or more
- local knowledge



How did we do? Data quality

Surveyors could confirm presence, but not absence unless they could relocate the lobarion trees

The methodology did not work well for recording complex sites with many trees with lobarion

The form worked well:

- 100% filled in the presence/absence of Lobarion
- 96% filled in positive indicators
- 96% filled in number/species of tree
- 67% filled in negative indicators
- 75% filled in environmental conditions

Not everyone used the form. Some assumed that we could extract the information needed from the BLS records spreadsheet, so we had to find a volunteer to do that.

Online recording might have helped?

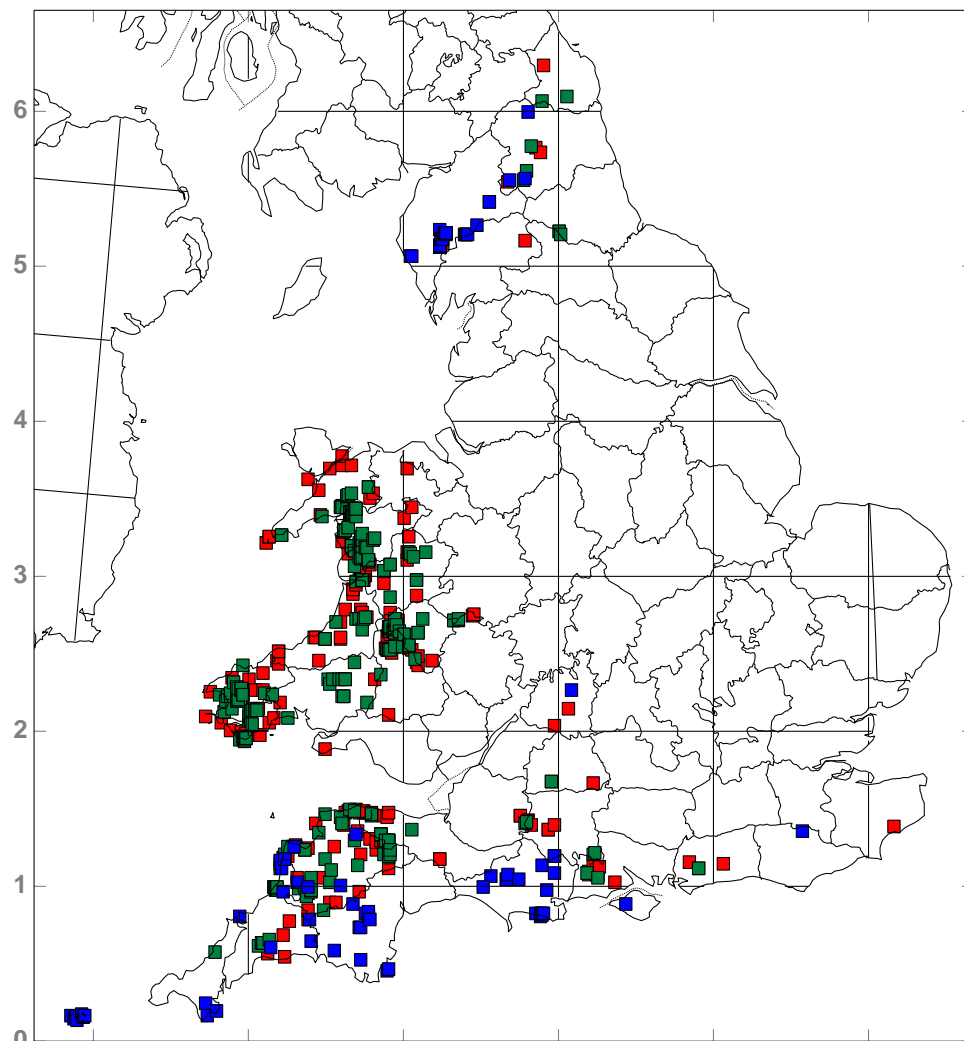


Coverage

Sites surveyed since 2000	299
Part of this project	91
Independently	208
Sites not yet resurveyed	222
Total	521

57.4% known sites now surveyed since 2000

17.5% as part of this project – the sites that wouldn't otherwise have been visited



Blue – surveyed for this project

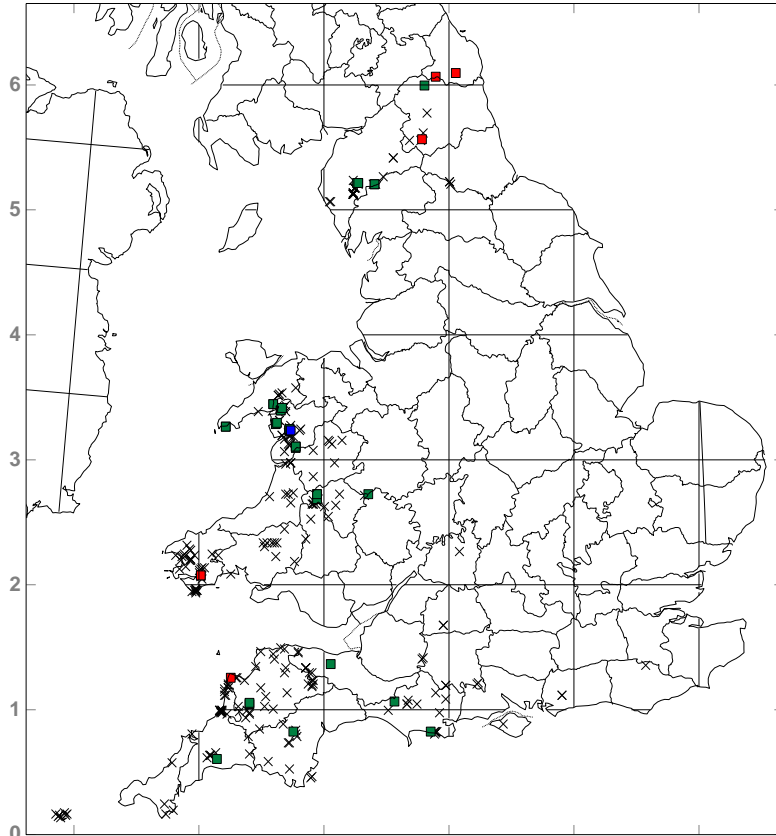
Green – surveyed since 1/1/2000

Red – site not visited since 1/1/2000

Preliminary findings – winners and losers

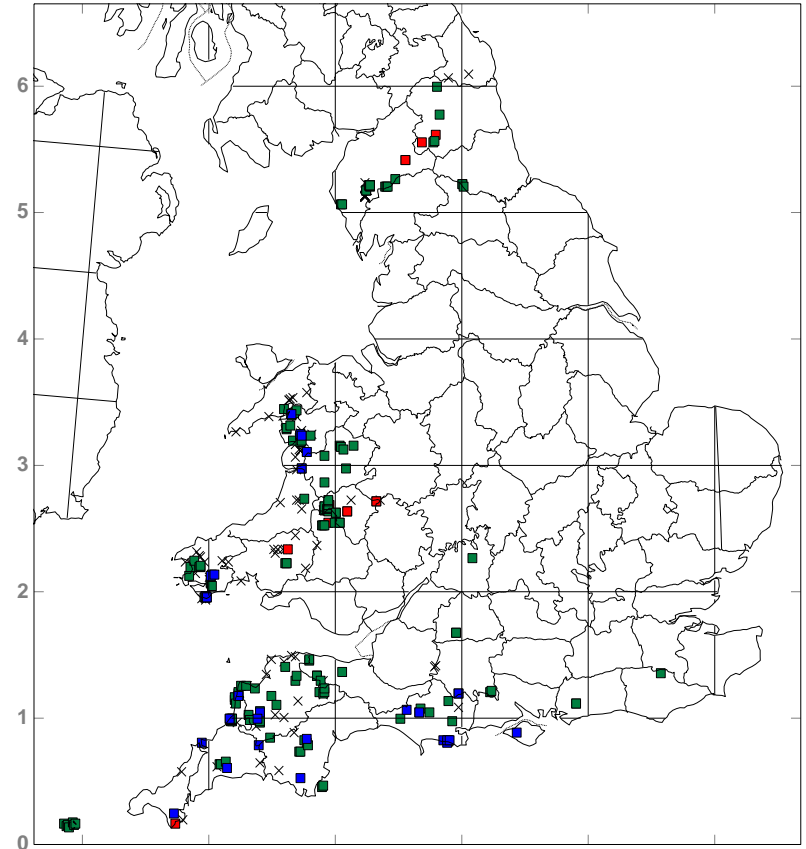
Lobaria amplissima

17.6% populations lost



Lobaria pulmonaria

5.3% populations lost



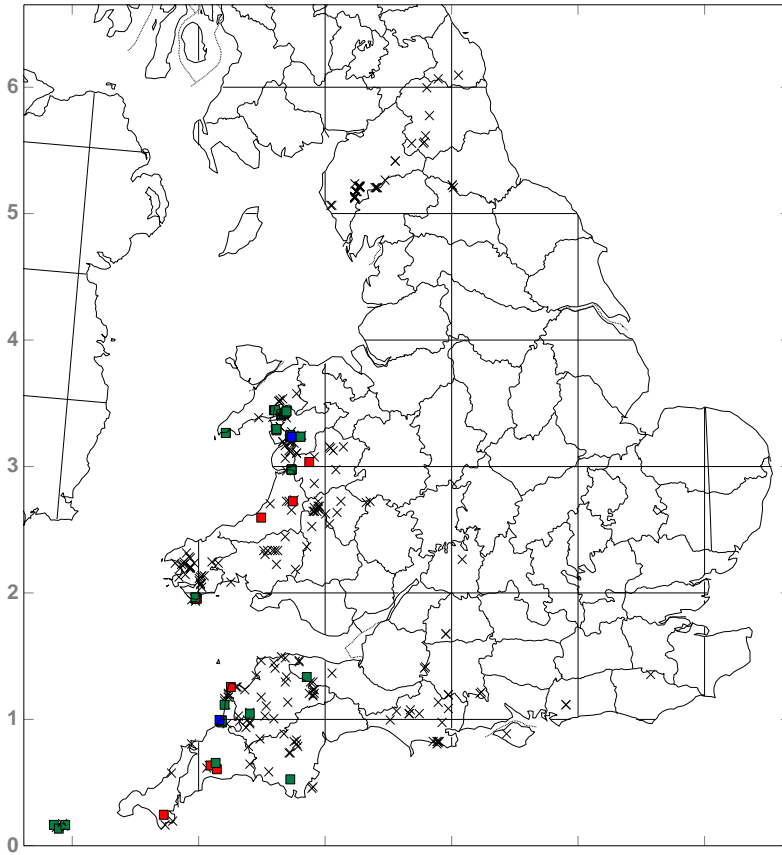
Blue – 5 or more occurrences present

Green – 1-5 occurrences present

Red – lost

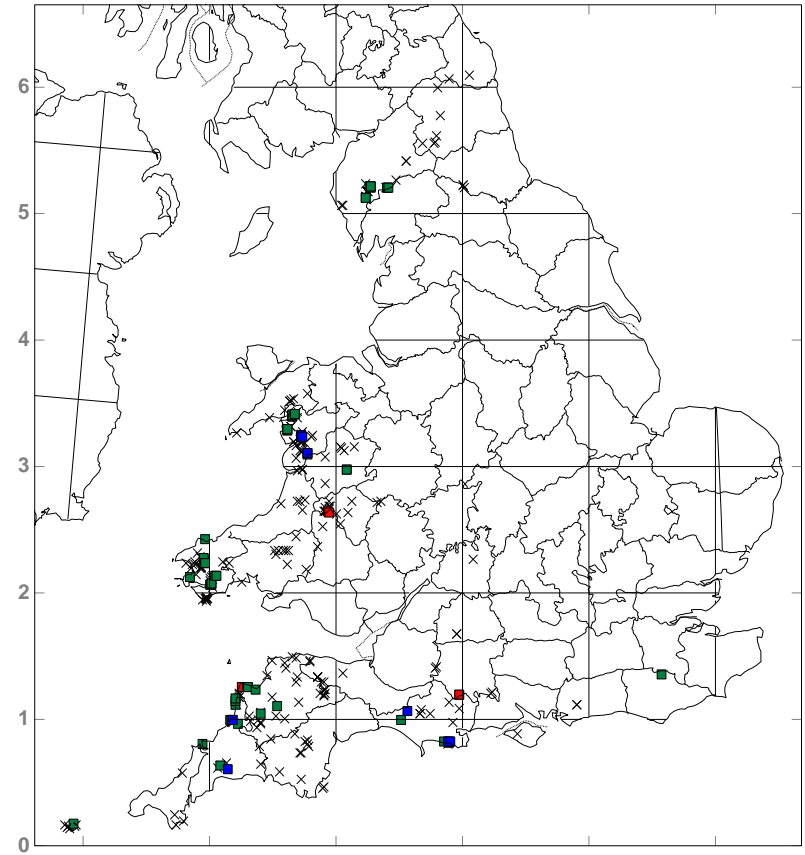
Lobaria scrobiculata

15.4% populations lost



Lobaria virens

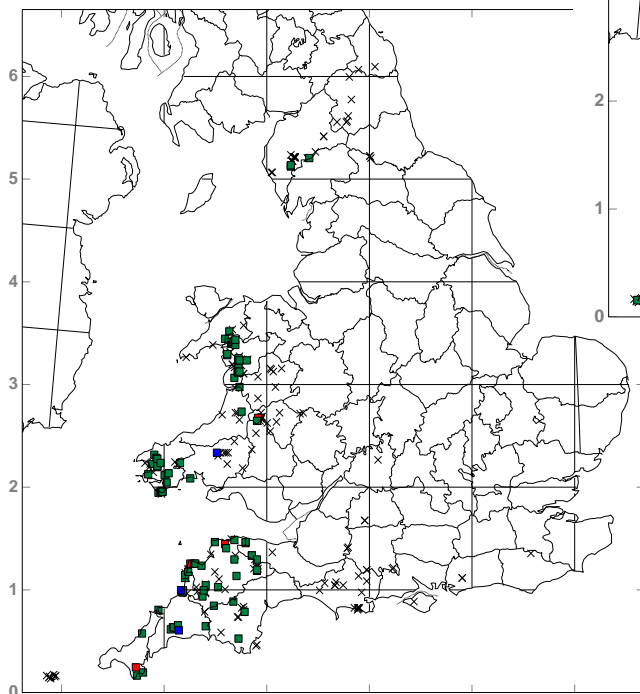
7.0% populations lost



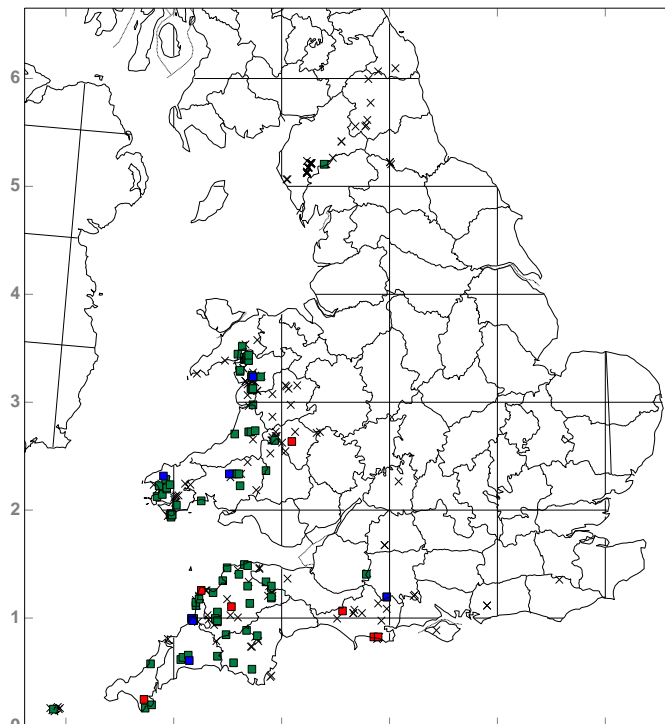
Blue – 5 or more occurrences present

Green – 1-5 occurrences present

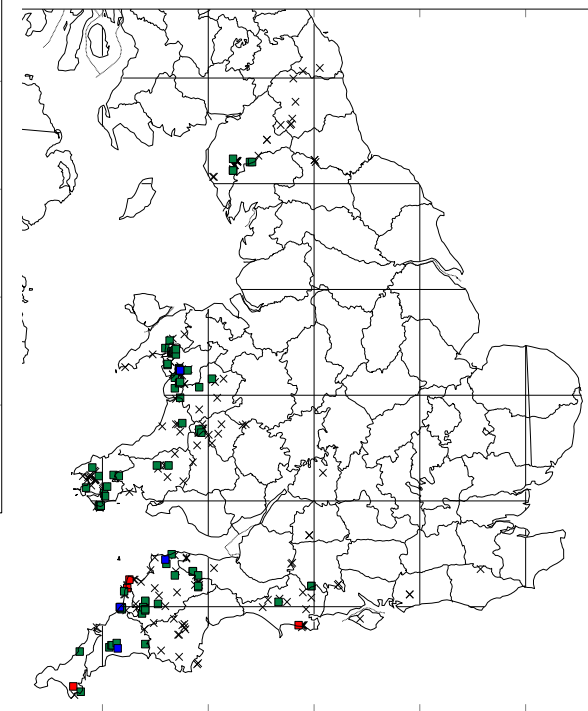
Red – lost



Sticta fuliginosa
5.1% populations lost



Sticta limbata
6.5% populations lost



Sticta sylvatica
4.3% populations lost

Blue – 5 or more occurrences

Green – 1-5 occurrences

Red – lost

Early indications of threats and causes of decline

Tree diseases leading to loss of mature trees

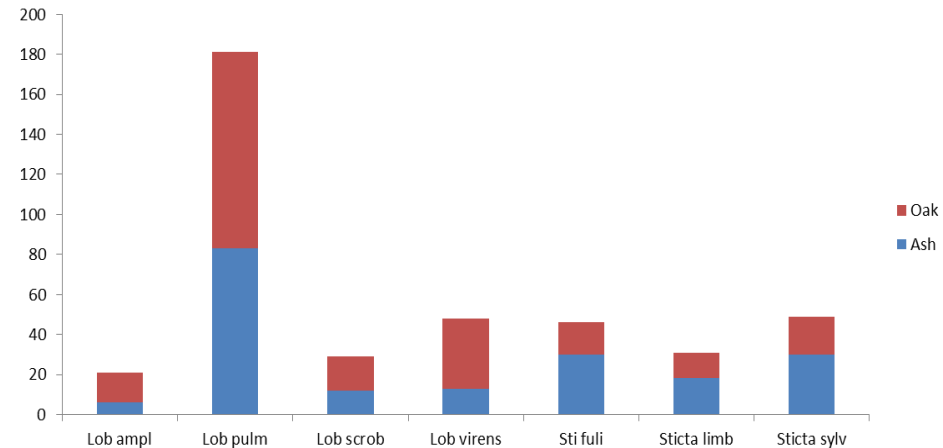
- Historic loss of trees to dutch elm disease
- Chalara and other 'new' tree diseases

Reduced light intensity on trunks of mature trees due to changes in woodland and hedgerow management
Rhododendron invasion

Atmospheric pollution leading to acidification

Viability of isolated small populations, given poor dispersal to adjacent trees before old host trees die

Numbers of records of *Lobaria* and *Sticta* species on ash and oak trees in England and Wales database

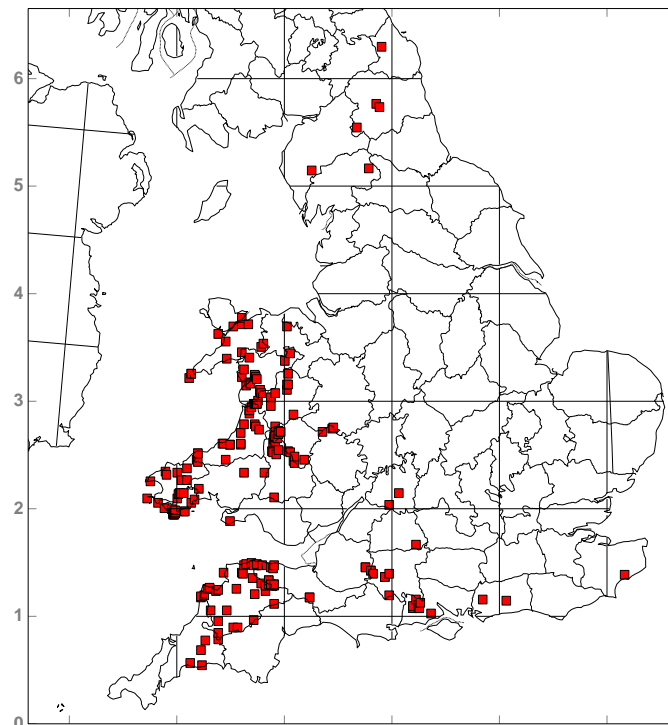


Conclusions

A success - the project has done much to “fill the gaps” and has confirmed that the relict lobarion communities, especially in England, are being lost but perhaps not as rapidly as we feared. The data we now have will provide a baseline for further monitoring.

Increasing participation – effective in some areas, but generally limited by the need for expert support.

Coverage – there is still much more to do in some areas. Finding people to do it will be difficult.



Sites not resurveyed since 2000

Data analysis and report writing – dependant on a small number of people with specialist skills and very little time. Still in progress.



Acknowledgements

Peter Lambley, Pat Wolseley and Theresa Greenaway,
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All those BLS members who have contributed to this
survey, and those who have taken part in the lichen
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photographs.