

Shropshire Botanical Society Online Flora Web application Specification

Joe J Collins

16th November 2020

Overview

The Shropshire Botanical Society is seeking to renew it's Online Flora web application. This specification out lines the hoped for functionality together with the technical and development constraints of the work.

Contents

1 Background	4
2 Objective	4
3 Usage and Users	4
4 NBN Data	5
5 Overview	6
6 Search County by Plant Name	7
6.1 Species List for County	7
6.2 Single Species Records for County	9
6.3 Single Occurrence Record	11
7 Search in a Site	12
7.1 Site for County	12
8 Search in a Square	16
8.1 Site for County	16
9 Technical Constraints	19
10 References	19

1 Background

The Shropshire Botanical Society has been dedicated to promoting the enjoyment, understanding and conservation of the flora of Shropshire since the 18th century. One of the principle activities of the Society is to collect and maintain records of plant sightings within the historical boundaries of the county of Shropshire. Since 2003 the Society has made these records freely available online via a bespoke web application or Online Flora. This original Online Flora was written using PHP and the CodeIgniter Web Framework backed by a MySQL database. The web application is still available at captain-blue.azurewebsites.net but unfortunately the data is now many years out of date.

Maintaining and updating the database has proved to be challenging. Additionally the application was conceived prior to the introduction of the iPhone and it not suited to mobile use. Hence the Society seeks to renew the web application, to provide a more modern mobile interface and to use up to date data stored by the National Biodiversity Network Atlas. Currently all the Society's records are submitted to the National Biodiversity Network Atlas and since 2017 the Society's records have been available via a web service at the NBN Web service API. Using the NBN Web service API provides reliable data source and a supported service for maintaining and updating the Society's records.

2 Objective

To replicate the functionality of the original Online Flora in a responsive mobile design using data sourced from the NBN Web service API.

3 Usage and Users

The Online Flora is used for searching the Society's records but not for entering new records. Maintaining and updating the data is conducted via a separate manual process. Searches of the database are conducted for three different geographical scenarios.

Search Shropshire searching all the records of based on the name of the plant. Allowing the user to drill down to a single sighting record or showing a map of grid squares with records for a named plant.

Search by Site searching for a named site, then listing the names of plants for that named site. Again allowing the user to drill down to a single sighting record.

Search by Monad or Grid Square Selecting a 1 km grid square within the county of Shropshire, then listing the names of plants for that named site. Again allowing the user to drill down to a single sighting record.

Users of the Online Flora are typically members of the Society and as such are often very experienced botanists and will favour

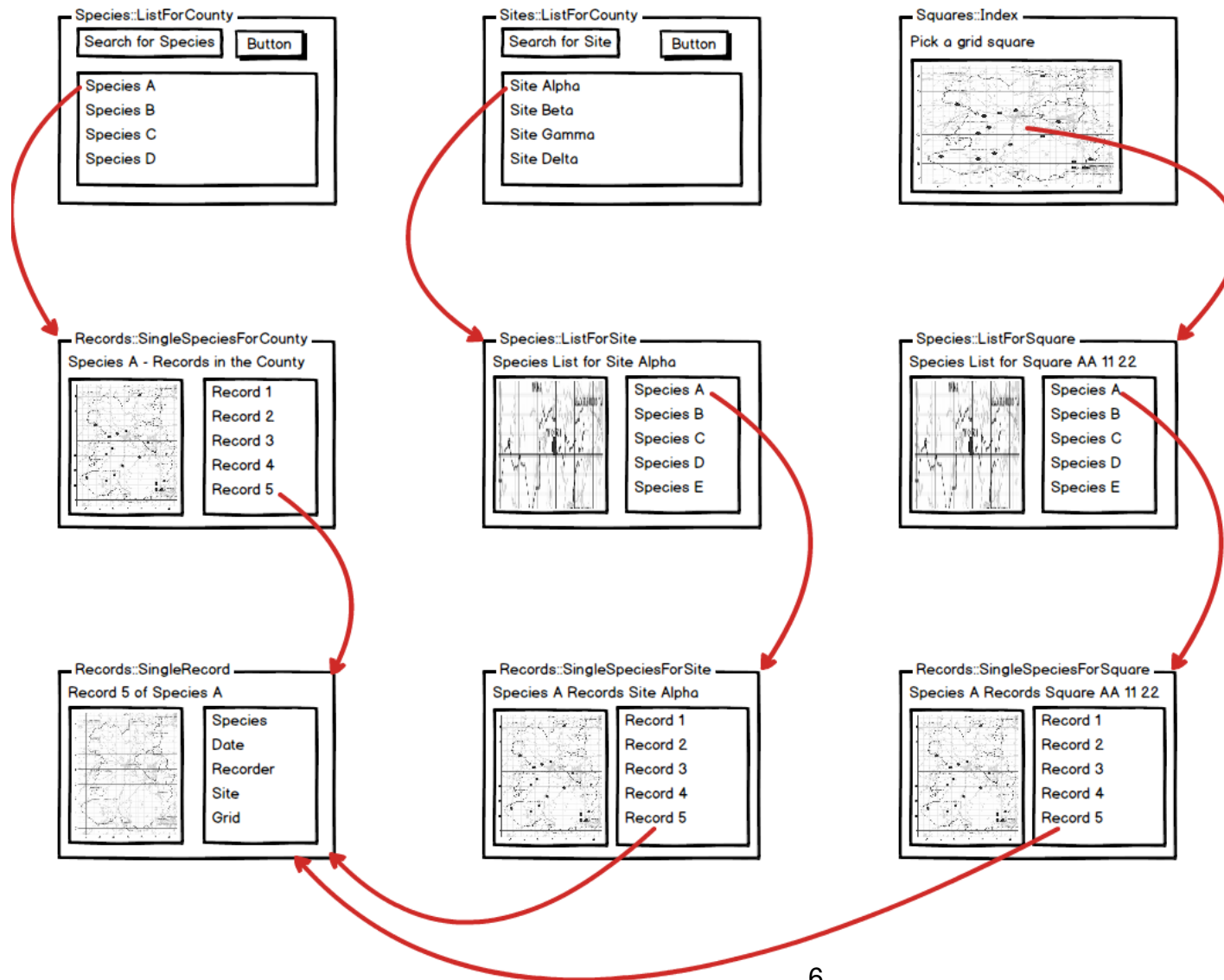
identifying plant species via the scientific name. A typical scenario would be a member of the Society intending to visit a location would search for a list of plants that have previously been sighted at that location. A similar search might also be conducted at the location of interest using a mobile phone. Up to this time the Society has not offered an interface that is suitable for mobile phone use. As a result there is no information about the types and sizes of the devices that might be used. However the Society does maintain a blog/website at www.shropshirebotany.org.uk. The majority of visitors to the site use Google Chrome on a Windows platform.

4 NBN Data

The Society's records exist within the Shropshire Ecological Data Network records. This dataset includes records from other recording groups in Shropshire.

Cache NBN data for a month, if valid json. Data turn over is slow the the NBN API can be laggy.

5 Overview



6 Search County by Plant Name

6.1 Species List for County

Shropshire Online Flora...

http://flora.shropshirebotany.org.uk/

[Find a Species](#) [Find a Site](#) [Find a Monad](#) [Contact](#)

Search for a Species in Shropshire

Enter all or part of a name

Q search

Try something like "Hedera"

☒ Scientific Names ☐ Common Names Only ☐ Axiophytes Only

☐ Only Plants ☐ Only Bryophytes ☒ Both Plants and Bryophytes

Family	Scientific Name	Common Name	Records
Carabidae	Abax parallelepipedus		51
Melandryidae	Abdera biflexuosa		5
Melandryidae	Abdera quadrifasciata		8
Melandryidae	Abia candens		2
Melandryidae	Abia fasciata		4
Melandryidae	Abia sericea		2
Pinaceae	Abies alba	European Silver-fir	3
Pinaceae	Abies grandis	Giant Fir	63
Pinaceae	Abies procera	Noble Fir	4
Pinaceae	Abortiporus biennis	Blushing Rosette	1
Pinaceae	Abroeus granulum		1

< | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 >

Shropshire Botanical Society Data supported by National Biodiversity Network

Shropshire Flora

[Species](#) [Site](#) [Monad](#) [Contact](#)

Shropshire

Q search AB

☒ Scientific ☐ Common ☐ Axiophytes

☐ Plants ☐ Bryophytes ☒ Both

Name	Records
Abax parallelepipedus	51
Abdera biflexuosa	5
Abdera quadrifasciata	8
Abia candens	2
Abia fasciata	4
Abia sericea	2
Abies alba	3
Abies grandis	63
Abies procera	4
Abortiporus biennis	1

< | 1 | 2 | 3 | 4 | 5 | >

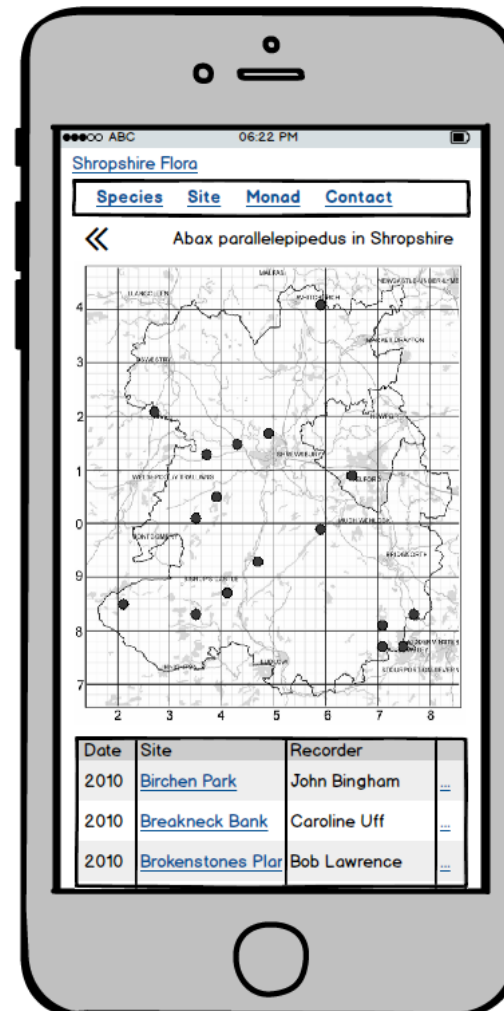
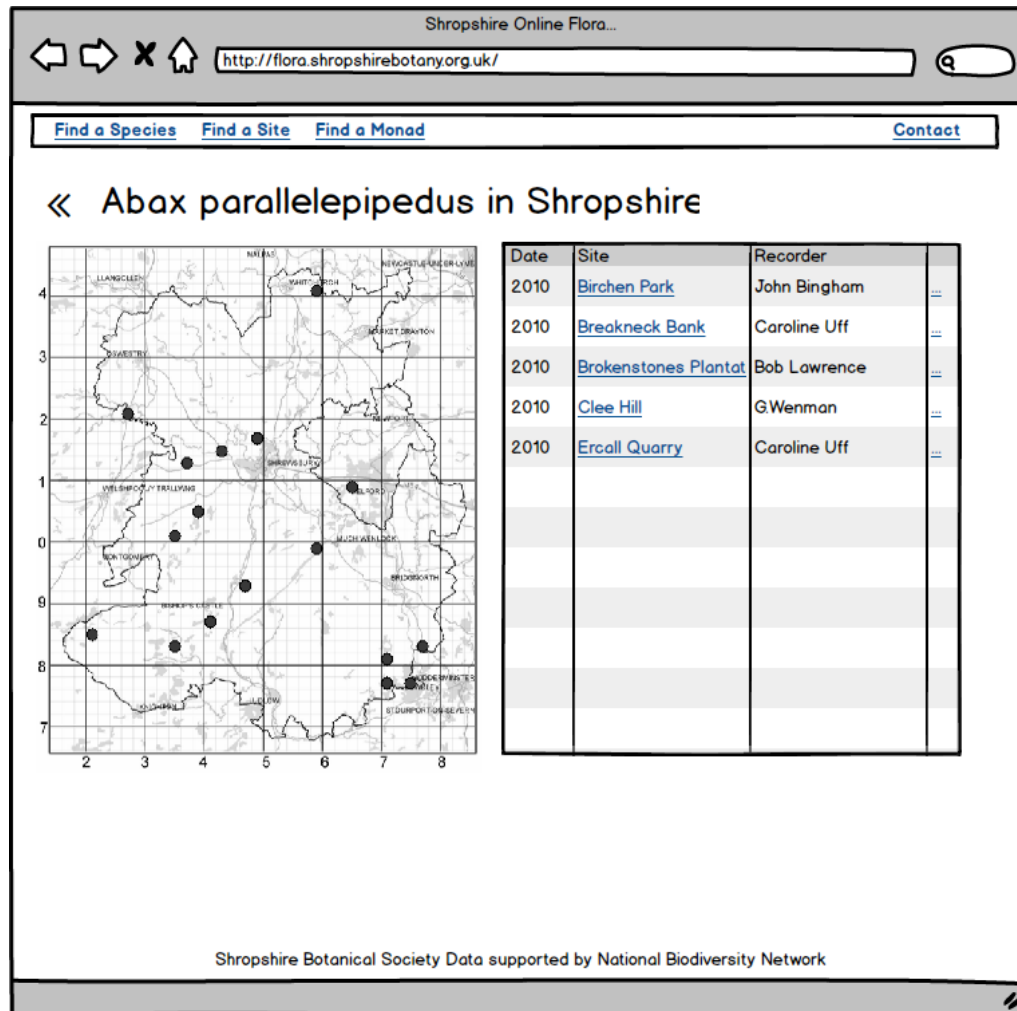
The 'landing' page for the application is the search of the entire dataset for the county.

- ☐ By default the **Scientific** name selected first.
- ☐ On landing the selected list is empty.
- ☐ The characters entered in the search box are used to search for names beginning with those letters, not within the names.
- ☐ Clicking on **list** or pressing return on the desktop list will fill the list.
- ☐ If **Common** is selected, only the species with common names will be searched and shown.
- ☐ If **Axiophytes** a limited static list of scientific names will be searched and shown.
- ☐ Changing the radio button will reset the search and blank the list.

e.g. ¹

¹https://records-ws.nbnatlas.org/explore/group/Plants?fq=data`resource`uid:dr782+AND+taxon`name:B*

6.2 Single Species Records for County



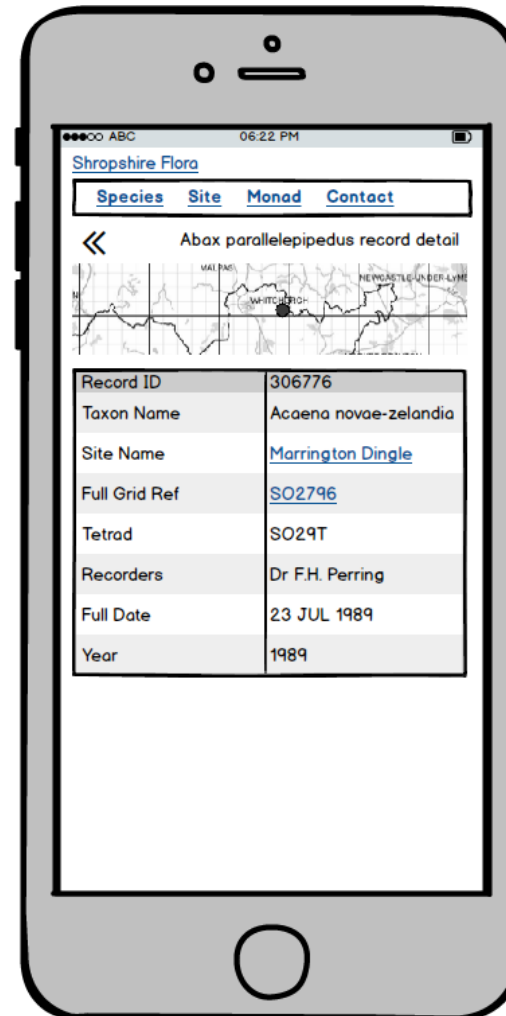
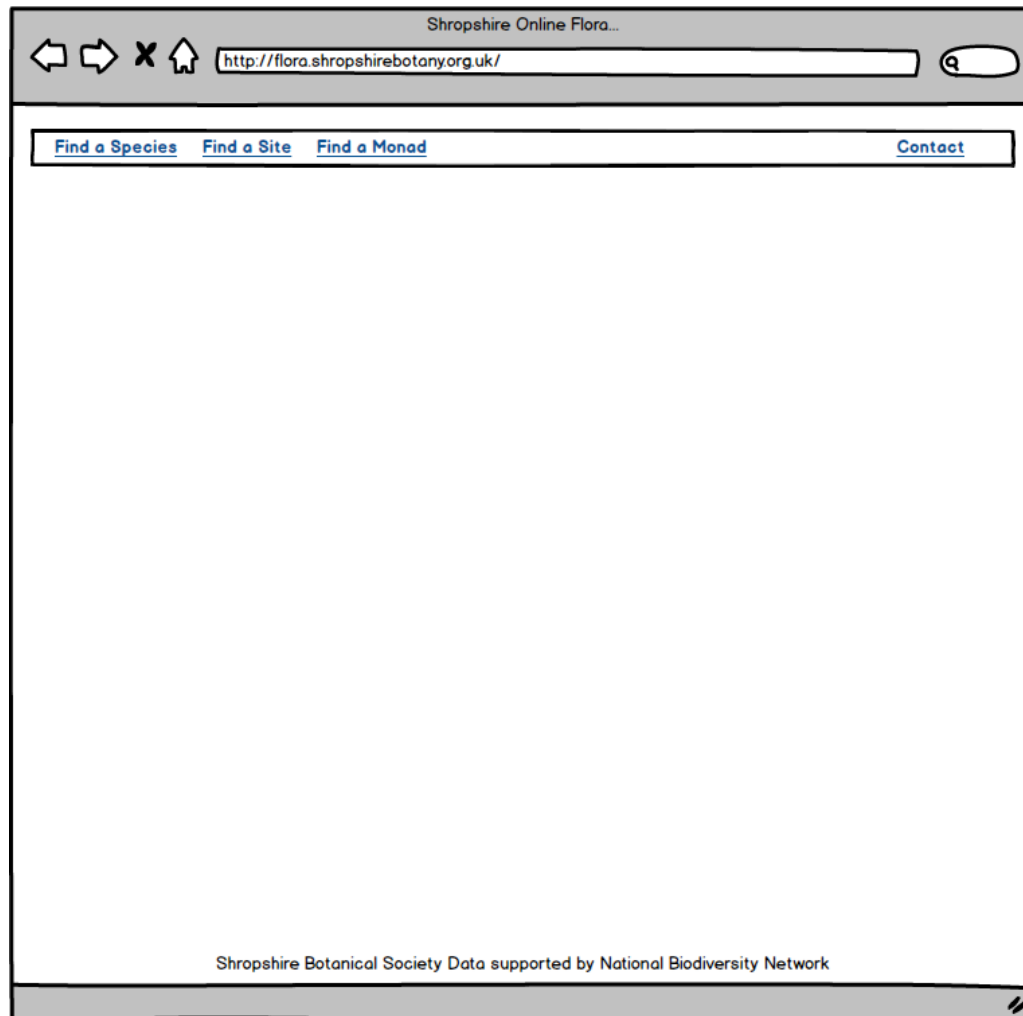
Clicking on a species name will show details for the

☐ Collapse the map? Retain state in cookie

☐ Page the records?

☐ Site link goes to what?

6.3 Single Occurrence Record



7 Search in a Site

7.1 Site for County

Shropshire Online Flora...

http://flora.shropshirebotany.org.uk/

[Find a Species](#) [Find a Site](#) [Find a Monad](#) [Contact](#)

Enter all or part of a name

Try something like "Shrews"

Shropshire Botanical Society Data supported by National Biodiversity Network

Shropshire Flora

[Species](#) [Site](#) [Monad](#) [Contact](#)

Site	Records
Church	56
Church Bank	4
Church Hill	34
Church Plantation	5
Church Quarry	13

< | 1 | >

- On landing the site list is empty.

e.g. [https://records-ws.nbnatlas.org/occurrences/search?fq=location_id:\[Church%20T0%20*\]&fq=data_resource_uid:dr782&facets=location_id&facet=on&pageSize=0](https://records-ws.nbnatlas.org/occurrences/search?fq=location_id:[Church%20T0%20*]&fq=data_resource_uid:dr782&facets=location_id&facet=on&pageSize=0)

Shropshire Online Flora...

http://flora.shropshirebotany.org.uk/

[Find a Species](#) [Find a Site](#) [Find a Monad](#) [Contact](#)

☒ Scientific Names
 ☐ Common Names Only
 ☐ Axiophytes Only

☐ Only Plants
 ☐ Only Bryophytes
 ☒ Both Plants and Bryophytes

Family	Scientific Name	Common Name	Records
Carabidae	Abax parallelepipedus		51
Melandryidae	Abdera biflexuosa		5
Melandryidae	Abdera quadrifasciata		8
Melandryidae	Abia candens		2
Melandryidae	Abia fasciata		4
Melandryidae	Abia sericea		2
Pinaceae	Abies alba	European Silver-fir	3
Pinaceae	Abies grandis	Giant Fir	63
Pinaceae	Abies procera	Noble Fir	4
Pinaceae	Abortiporus biennis	Blushing Rosette	1
Pinaceae	Abraeus granulum		1

Shropshire Botanical Society Data supported by National Biodiversity Network

Shropshire Flora

[Species](#) [Site](#) [Monad](#) [Contact](#)

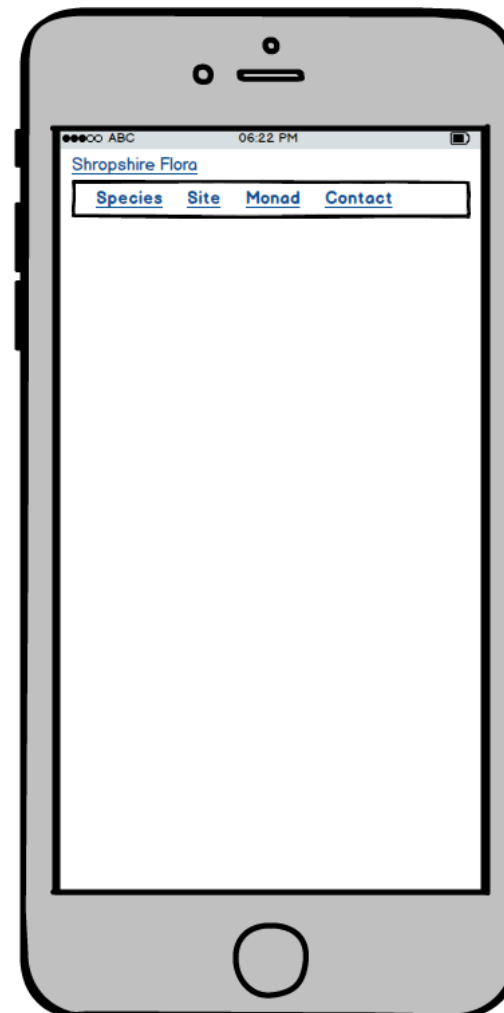
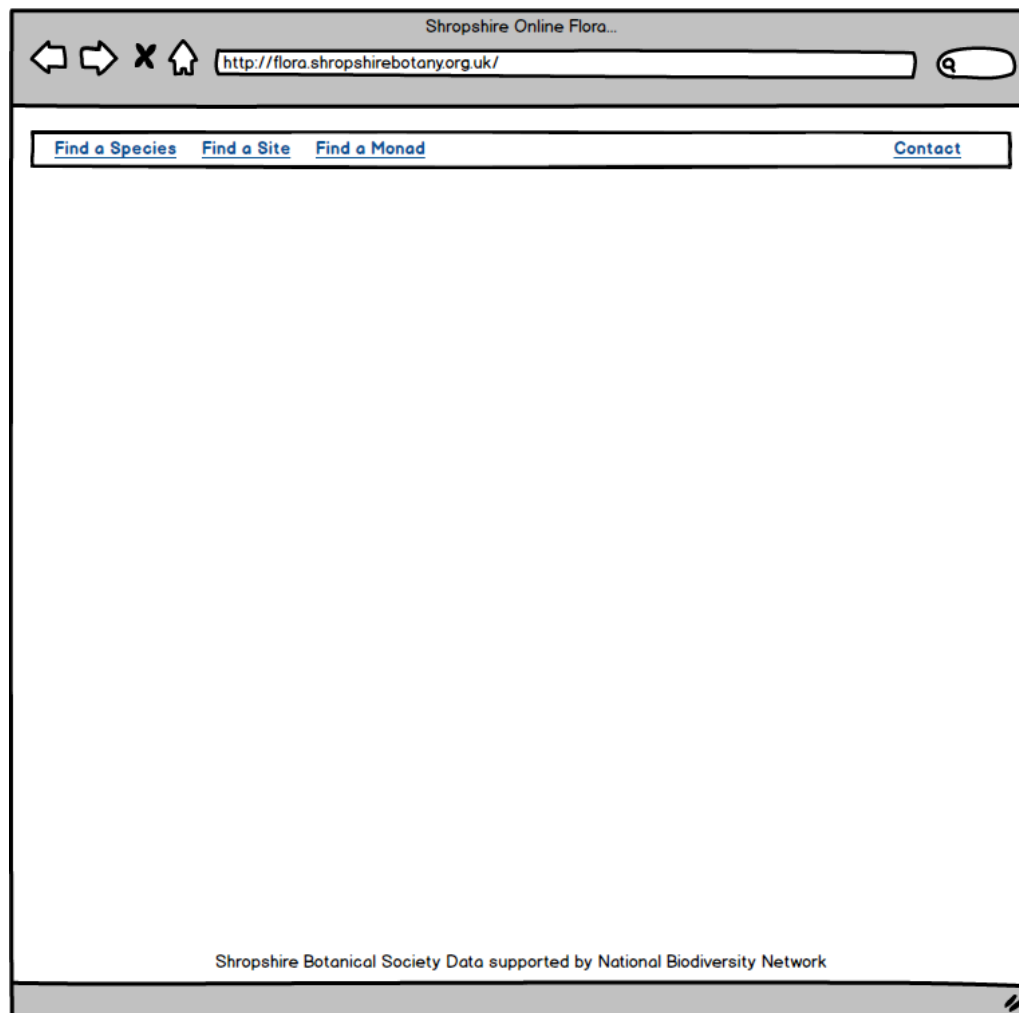
<< Species at Church Hill

☒ Scientific
 ☐ Common
 ☐ Axiophytes

☐ Plants
 ☐ Bryophytes
 ☒ Both

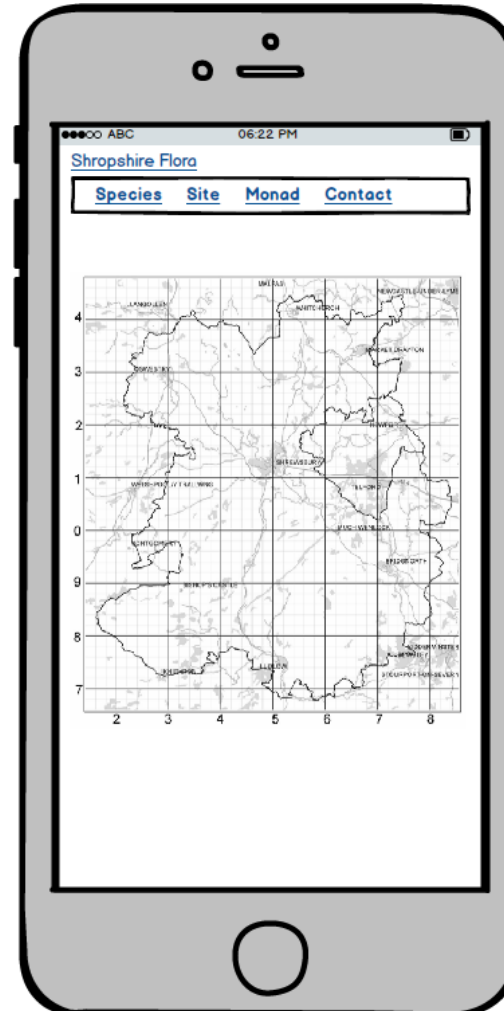
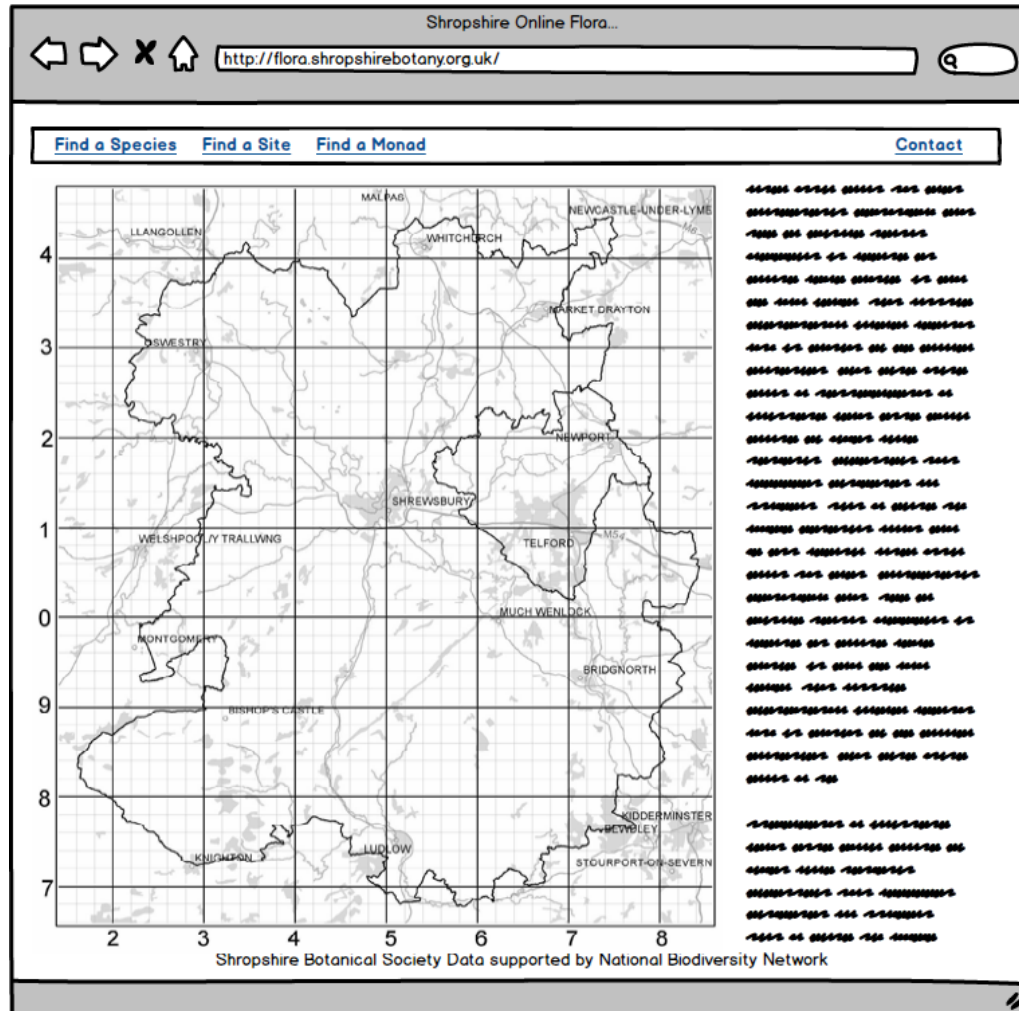
Name	Records
Abax parallelepipedus	51
Abdera biflexuosa	5
Abdera quadrifasciata	8
Abia candens	2
Abia fasciata	4
Abia sericea	2
Abies alba	3
Abies grandis	63
Abies procera	4
Abortiporus biennis	1

< | 1 | 2 | 3 | 4 | 5 | >



8 Search in a Square

8.1 Site for County

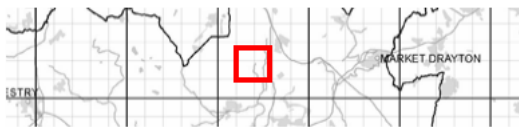


Shropshire Online Flora...

http://flora.shropshirebotany.org.uk/

[Find a Species](#) [Find a Site](#) [Find a Monad](#) [Contact](#)

« Grid Square TF20



Family	Scientific Name	Common Name	Records
Carabidae	Abax parallelepipedus		51
Melandryidae	Abdera biflexuosa		5
Melandryidae	Abdera quadrifasciata		8
Melandryidae	Abia candens		2
Melandryidae	Abia fasciata		4
Melandryidae	Abia sericea		2
Pinaceae	Abies alba	European Silver-fir	3
Pinaceae	Abies grandis	Giant Fir	63
Pinaceae	Abies procera	Noble Fir	4
Pinaceae	Abortiporus biennis	Blushing Rosette	1
Pinaceae	Abraeus granulum		1

< | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 >

Shropshire Botanical Society Data supported by National Biodiversity Network

Shropshire Flora

[Species](#) [Site](#) [Monad](#) [Contact](#)

« Grid Square TF20



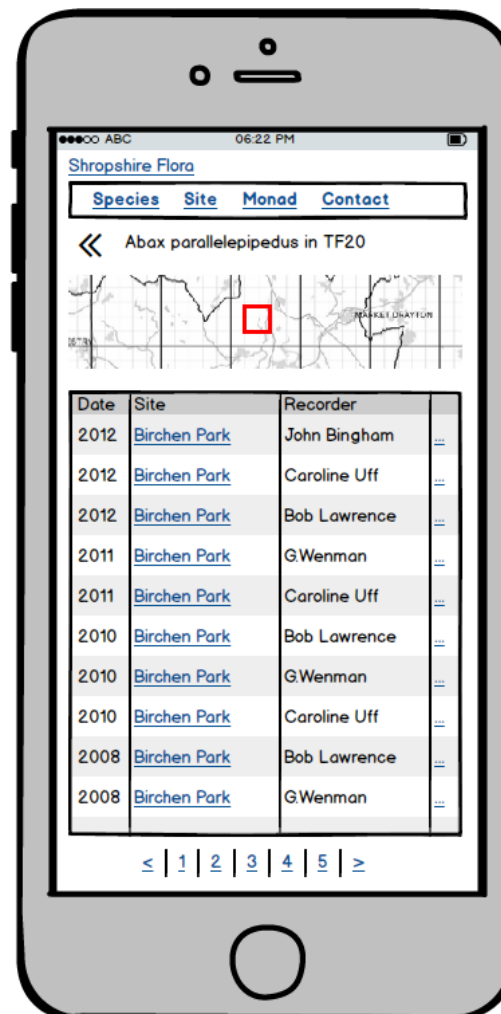
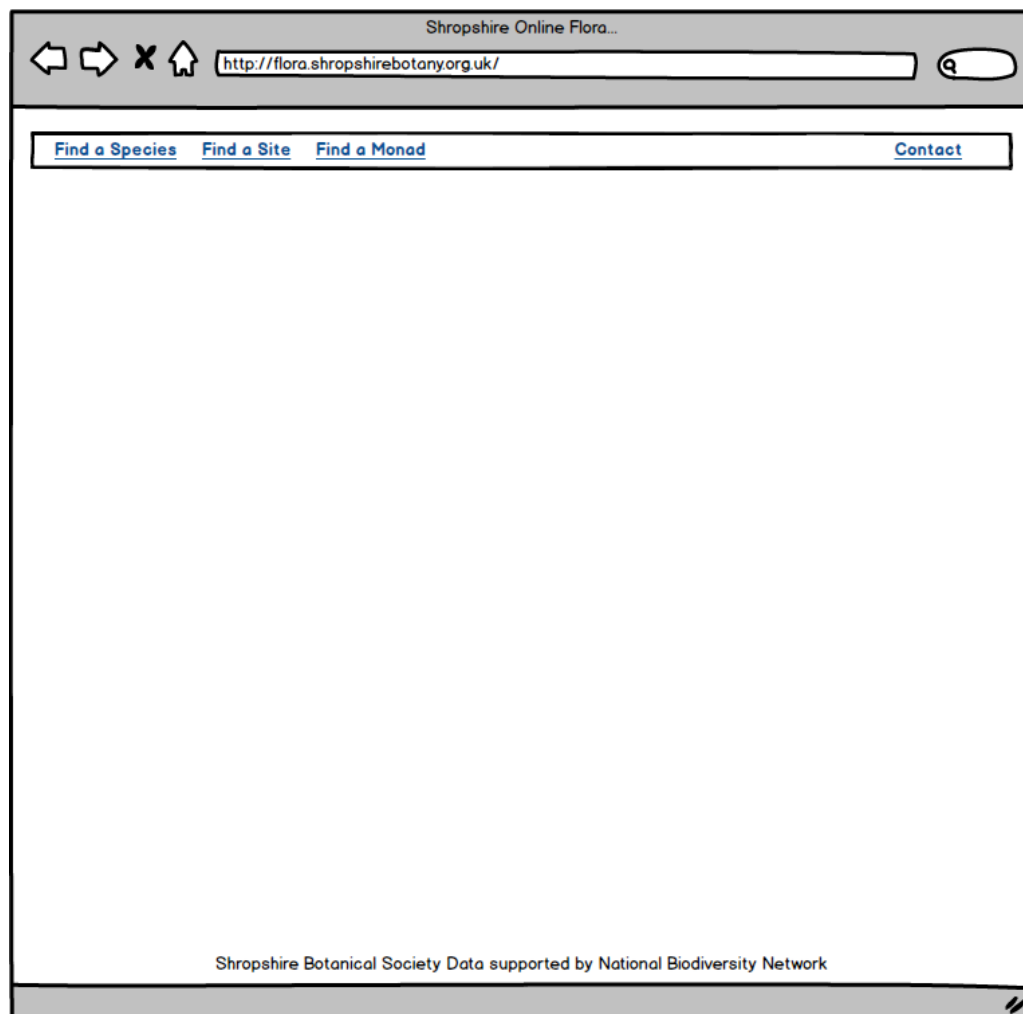
Q search [List](#)

☒ Scientific ☐ Common ☐ Axiophytes

☒ Plants ☐ Bryophytes ☐ Records

Abax parallelepipedus	51
Abdera biflexuosa	5
Abdera quadrifasciata	8
Abia candens	2
Abia fasciata	4
Abia sericea	2
Abies alba	3
Abies grandis	63

< | 1 | 2 | 3 | 4 | 5 | >



9 Technical Constraints

The Botanical Society has limited means and wishes to ensure that the results of any programming effort can be maintained and supported into the future.

PHP 7.3 for deployment to Google App Engine.

CodeIgniter 4.0.4 has been used successfully in the past and provides convenient caching should it be required.

Twitter Bootstrap 4.5.2 for responsive layout.

Leaflet 1.6.0 should be used to provide mapping services. <https://github.com/DuncanRowland/NBNMapOverlayExamples>

Commits to Github since the Society will retain the intellectual property rights over any code produced. So all branching should be on the repository at Github The Society will

Style Sheet taken from www.shropshirebotany.org.uk. The Online Flora is to be consistent with this website, so should reuse the same classes and styles.

No API Calls from the Client because we might want to use caching.

No database should be used other than the NBN Web service API. Any static data (such as the list of Axiophytes) should be hard coded into the application.

10 References

NBN Atlas Query Primer.

Easy Map

e.g. example

Map NBNMapOverlayExamples

e.g. Scotland

Cornish Biodiversity Network

<https://docs.nbnatlas.org/>

<https://www.naturespot.org.uk/species/lesser-bulrush>

<http://www.cornishbiodiversitynetwork.org/xyz/Getspecies.php>