

Plant Monitoring and Conservation Projects of the Stirling and Clacks SWT Group Four Case Histories



Roy Sexton

Chairman of Stirling and Clacks SWT Group

Most of our botanical projects involve monitoring the status of either the habitats or plant species that were considered of 'conservation concern' by the specialists who drew up our Local Biodiversity Action Plans'

We monitor most of the selected species or habitats regularly and if we find they are threatened we will take action

Our projects generally involves:

- 1) Finding the plant species or habitats
- 2) Recording species or assessing habitats using axiophyte counts and detailed mapping with GPS
- 3) Monitoring by repeating the counts every 1,2 or 3 years
- 4) Taking action if the species/habitat is threatened

Stirling Council Area -

Biodiversity Action Plan

Progress Report 2000-2010



Over the last 17 years we have built up a portfolio of over 60 sites/species that we monitor.
If the numbers decline by more than 70 % (red) we take some sort of remedial action

In the 15 mins allocated I can only describe 4 typical case histories

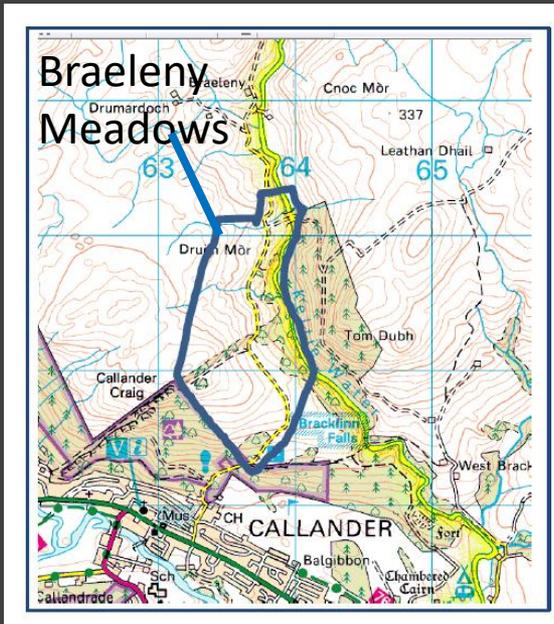
Site	Axiophyte	Status
Touch Hills	Juniper	Stable
Sandy Pines	Alt Leaved Saxifrage	Declining or extinct
Braeleny	Early P. Orchid	Recovering
Todholes	Early P. Orchid	Declining or extinct
Aberfoyle	Early P. Orchid	Stable
Braeval	Early P. Orchid	Stable
Tillycoultry	Early P. Orchid	Stable
Quoigs meadow	Early P. Orchid	Stable
Dollar Glen	Toothwort	Stable
Darn Walk	Toothwort	Stable
Cocksburn Reservoir	Petty Whin	Recovering
M9 J9 Services	Cowslips	Stable
Lecropt A9	Cowslips	Stable
Glen Tye	Early Marsh Orchid	Declining or extinct
Brig o Turk	Early Marsh Orchid	Stable
Carsebreck	Early Marsh Orchid	Stable
Glenlichhorn	Early Marsh Orchid	Stable
Lubnaig	Early Marsh Orchid	Stable
Kippen Rait Glen	Birds Nest Orchid	Stable
Doone Woods	Birds Nest Orchid	Stable
Yellow Craigs	Sticky Catchfly	Stable
Glen Farg	Sticky Catchfly	Recovering
Leny Flushes	Coral Root	Declining or extinct
Lecropt A9	Adders Tongue Fern	Declining or extinct
Cambus Pools	Spotted Orchids	Recovering
Wester Balgair	Lesser Butterfly Orchid	Stable
Ballangrew	Lesser Butterfly Orchid	Recovering
Westerton Carsebreck	Lesser Butterfly Orchid	Stable
Gannochan Carsebreck	Lesser Butterfly Orchid	Stable
Denny Muir	Lesser Butterfly Orchid	Declining or extinct
Callander GC	Lesser Butterfly Orchid	Declining or extinct
Quoigs Meadow	Lesser Butterfly Orchid	Declining or extinct

Callander GC	Lesser Butterfly Orchid	Declining or extinct
Quoigs Meadow	Lesser Butterfly Orchid	Declining or extinct
Morenish SSSI	Small White Orchid	Declining or extinct
Doone Westerton	Globe Flower	Recovering
Teith Callander	Globe Flower	Stable
Plean CP	Greater Butterfly Orchid	Stable
Bomains meadow	Greater Butterfly Orchid	Stable
Kippen meadow	Greater Butterfly Orchid	Stable
Sauchie meadow	Greater Butterfly Orchid	Declining or extinct
Glinns Lane	Greater Butterfly Orchid	Declining or extinct
Braeleny Meadows	Greater Butterfly Orchid	Recovering
Brig o Turk	Greater Butterfly Orchid	Stable
Ashfield	Greater Butterfly Orchid	Stable
Glenlichorn	Greater Butterfly Orchid	Recovering
Comrie	Greater Butterfly Orchid	Declining or extinct
Strathyre	Greater Butterfly Orchid	Declining or extinct
Westerton Doone	Lesser Bladderwort	Stable
Leny Quarry	Field Gentian	Stable
Balgair Muir	Frog Orchid	Stable
Conic Hill	Bog Orchid	Declining or extinct
Inverlochlarig	Bog Orchid	Stable
Cambus Pools	Broad Leaved Helleborine	Stable
University Wood	Broad Leaved Helleborine	Declining or extinct
Skinflats	Yellow Bird's Nest	Stable
Braeleny Meadows	Grass of Parnassus	Stable
Westerton Doone	Grass of Parnassus	Stable
Rannoch Moor	Pitcher Plants	Stable
Tombeith	Marsh Helleborine	Stable
Elie	Pyramidal Orchid	Declining or extinct
Declining or extinct		Declining or extinct
Recovering		Recovering
Stable		Stable

Case Study 1

LBAP Grassland Habitat Action Plan

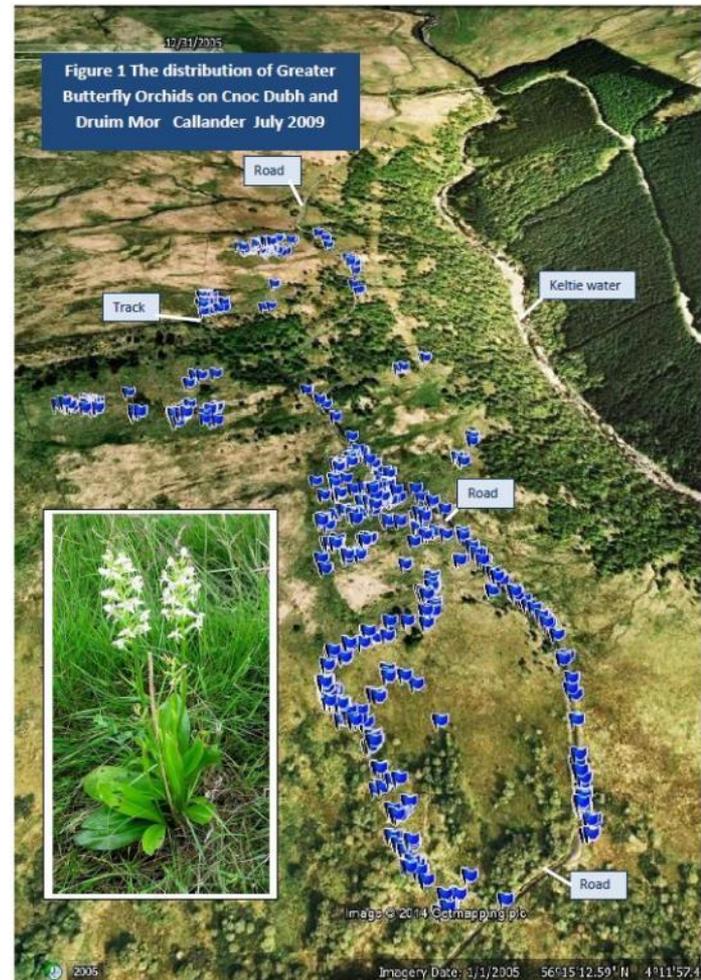
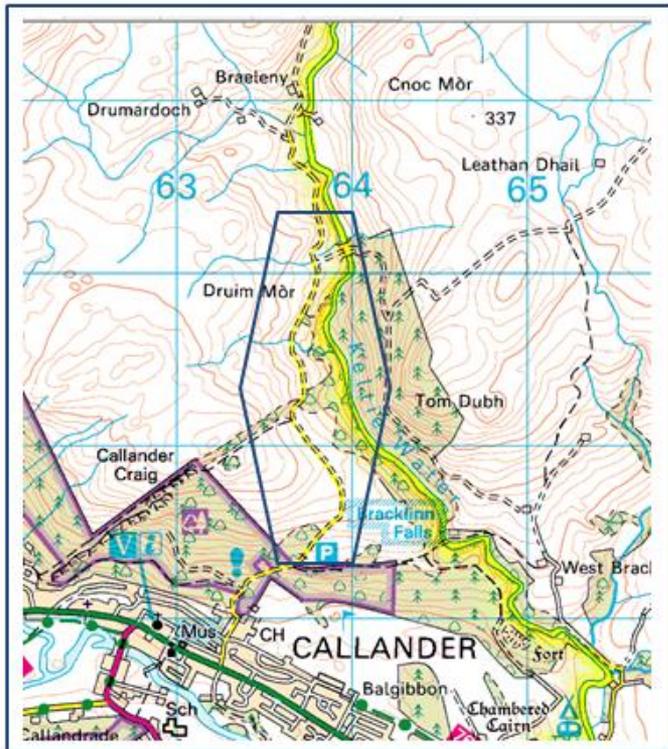
Loch Lomond and Trossachs National Park Action Plan stated *'Undertake to survey and assess priority grasslands and identify potential areas for management and restoration'*



Whilst undertaking surveys in 2006 to find priority grasslands in VC 86 and 87 (as described in our local LBAPS) we stumbled upon a wonderfully rich 28 ha area of northern hay meadow north of Callander. Over the next two years we discovered it contained seven species of orchids together with large numbers of globe flowers and grass of parnassus .

Our SWT group organised the counting and mapping of 8 axiophytes to determine the extent of the site eg Fig 1 below . BSBI recorders Jane Jones and Liz Lavery together with PSNS made species lists and carried out phase 2 habitat surveys . We wrote up a report and submitted it to the LLTNP and SNH in the hope they would give the site some statutory protection.

**A Case for Protecting an Unusually Rich
Assemblage of Flowering Plants in the
Meadows Along the Sides of the Braeleny
Farm Road, North of Callander**



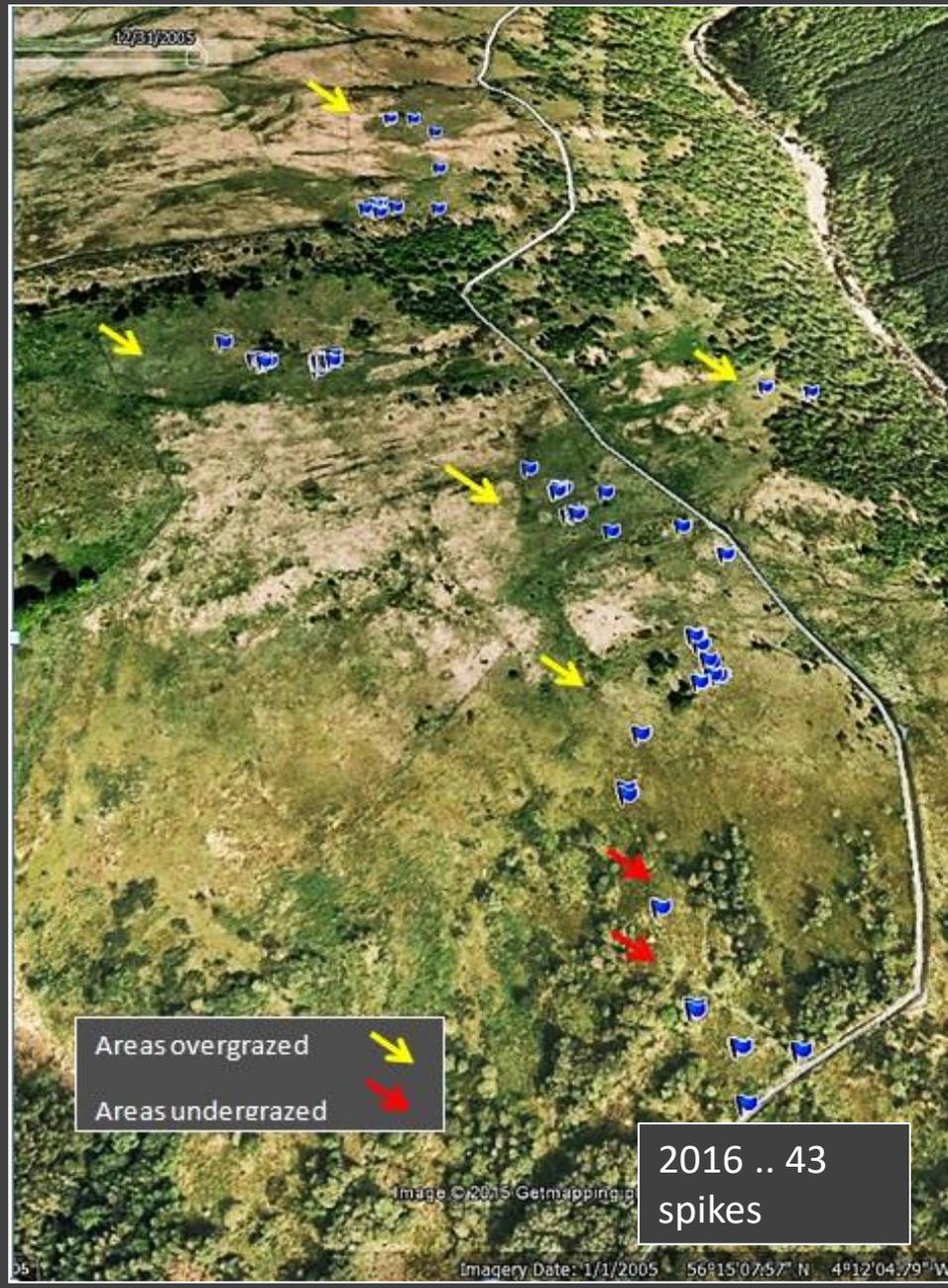
In the report we pointed out that 'Species rich grassland protected under SSSI designation is Critically Low ' in Central Region (Crawford 1993)

SNH staff took an active interest in the proposal meeting both us and LLTNP staff. Unfortunately SNH decided they had no appetite to create new SSSIs at present so we will have to wait for a change of policy .

Whilst these discussions were taking place the greater butterfly monitoring showed a major decline in numbers from 426 in 2009 to 43 in 2016 (see next slide). This seemed to be associated with a change of grazing regime from winter to summer grazing as part of the LLTNP Black Grouse recovery programme . This was done to modify these pastures so they were more favourable habitat for black grouse

SWTs Braeleny Hay Meadows Callander 2009 Survey		
Common Name	Latin Name	Numbers of Flowering Spikes 2009
Greater Butterfly Orchid	Plantathera chlorantha	426 Individuals mapped
Early Purple Orchid	Orchis mascula	273 Individuals mapped
Fragrant Orchid	Gymnadenia conopsea sens. lat.	346 and few hybrids Individuals mapped
Northern Marsh Orchid	Dactylorhiza purpurella	Tens of the pure form but many hundred hybrids
Common Spotted Orchid	Dactylorhiza fuchsii	Hundreds
Heath Spotted Orchid	Dactylorhiza maculata	Hundreds
Common Twayblade	Neottia ovata	296 Individuals mapped
Globe Flower	Trollius europaeus	397 Individuals mapped
Grass of Parnassus	Parnassia palustris	434 Individuals mapped
Goldilocks Buttercup	Ranunculus auricomus	3 large colonies one 20x6m NN 63898 09107
Melancholy Thistle	Cirsium heterophyllum	17 flowering spikes NN 63635 09255







Impact of
Grazing

This area of Braeleny Meadows which is rich in twayblades and globeflowers was photographed on 8th June 2016. There were 1180 flowering globeflower spikes



One week later 38 cattle were grazing 50m from the same plot



Impact of
Grazing

Exactly the same area of Braeleny Meadows one year later on 16th June 2017 showing the reduction of globe flower spikes from 1180 to 167.

In 2016 we became aware that the Callander Crags footpath which runs through the area was to be upgraded. Five species of orchid, mountain everlasting, globe flower and melancholy thistle were found within 2m of the existing track (blue flags)



Whilst surveying the track with John Snodin in 2016 we discovered right at the path edge the first record in VC 87 for the Small White Orchid. There were 5 plants in all. In subsequent discussions with the Loch Lomond and Trossachs National Park Access Officer he readily agreed to amend their proposals to avoid harming this special collection of plants



Case Study 2 Local Species Action
Plan for Sticky catchfly
Silene viscaria

This beautiful plant grew on the cliffs and crags of 21 sites in the UK in 2002 . The most famous of these was Arthurs Seat where it was first recorded in 1670



It was also found in our area along the southern scarp of the Ochils

The plant had been lost by 1986 from the cliffs of Abbey Craig which supports the Wallace Monument.

Prof John Proctor found 25 plants on the Yellow Craigs behind Stirling University in 1976. The Biodiversity Officer subsequently recorded 14 plants in 2003. Since 2006 the SWT group has carried out annual counts and each year the numbers have increased probably as a result of the reduction of grazing sheep .

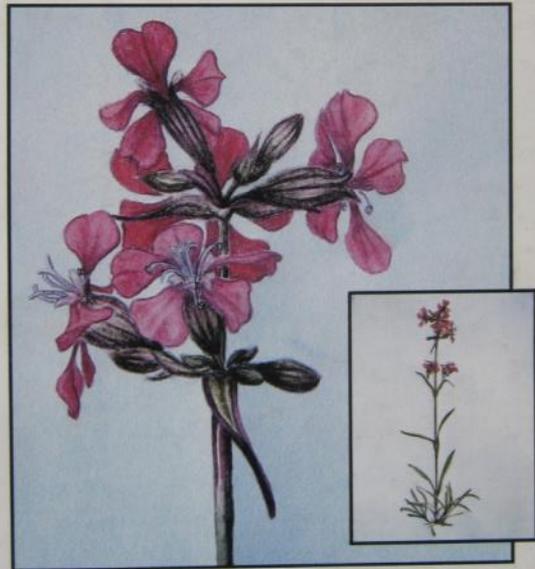
Date	Clumps
1976	25
2003	14
2006	60
2008	90
2010	55
2012	90
2013	108
2014	260
2015	240
2016	290

← Stirling
BAP

← Fencing
repaired



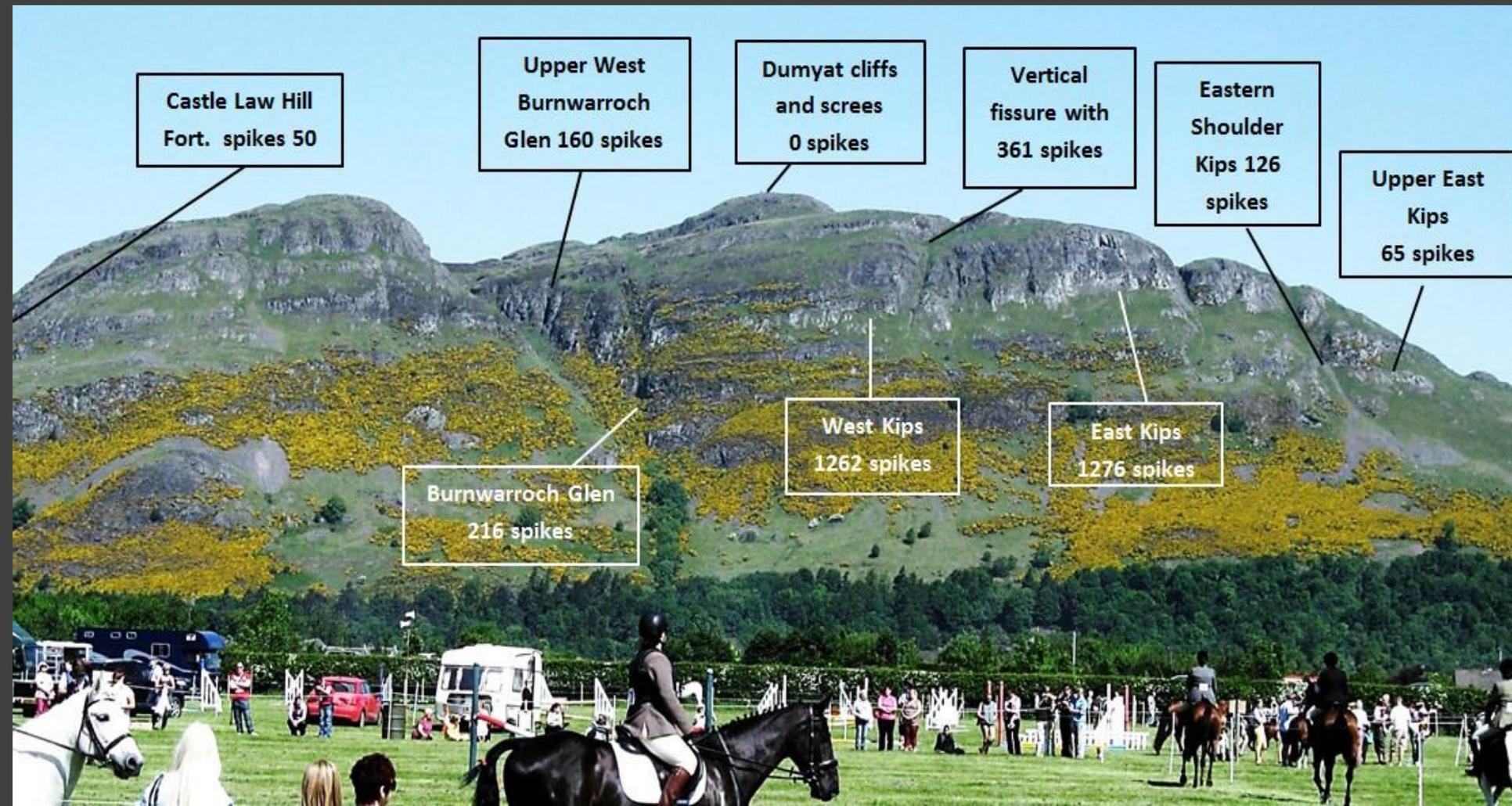
Stirling University Nature Society (SUNS) had helped with some of these Yellow Craigs counts



The Sticky Catchfly *Lychnis viscaria* L.
Painting by Angela Heaney

Volume 11

SUNS obtained a grant from the Forth Naturalist and Historian 'What's Changed Programme' to follow up surveys that were reported in the early editions of the FNH Journal. One of these was an article on Sticky Catchfly in the first edition and students undertook a two week survey of the cliffs along the south face of the Ochils.



The students recorded over 3,000 flowering spikes on the south scarp of Dumyat by far the biggest meta-population in the UK yet with no statutory protection. Although there were large numbers of plants on the sheep free cliffs other populations like those on the top of Dumyat had been lost to grazing.



Sticky Catchfly on the Eastern Ochils

The famous colony on Glen Farg railway embankment south of Perth has been overgrown by trees however on the Binns Road embankment there were :

207 flower spikes on June 3rd 2015
Two years later there were only
64 flower spikes on June 3rd 2017

The reduction of flowering spikes was due to the growth of the gorse seedlings shown by red arrows in the 2015 picture.

The land owners have been found and have agreed for the gorse to be removed

Concerns were raised about the status of other sticky catchfly colonies when we could not find this colony illustrated in Philip Lusby's book 1995 at Port o Warren SSSI on the Solway coast .. Though we did find 5 flowering plants on SWT's Southwick Cliffs Reserve just along the coast



Southwick Cliffs

PLANT REPORT 2016 PART 2

HOW IMPORTANT ARE THE HILLFOOTS' POPULATIONS OF STICKY CATCHFLY (*SILENE VISCARIA*) IN A UK CONTEXT?

Roy Sexton (Stirling and Clackmannanshire SWT)

Introduction

Sticky Catchfly (*Silene viscaria*; synonym *Lychnis viscaria*) is a Red Data listed plant classified as 'Near Threatened' by the International Union for Conservation of Nature (Cheffings and Farrell, 2005). As the sister article by Bence and Blackmore (2016) relates nearly 4,000 flowering spikes were found in 2013 on the south facing cliffs and crags beneath Dumyat and Craig Leith in Clackmannanshire. To judge how important these local populations are in a UK context the Botanical Society of Britain and Ireland's (BSBI) data base has been consulted to obtain details of where sticky catchfly has been found. The BSBI Vice County (VC) recorders for these sites were contacted and all provided helpful information about the current state of their



Figure 1 *Silene viscaria* sites in 2002 . Modified from the New Atlas of the British and Irish Flora

During the winter of 2016 I wrote to all the BSBI recorders that had sticky catchfly in their vice counties and published the results in the Forth Naturalist and Historian.

Summary

The survey shows that there are apparently only 10 surviving sticky catchfly populations and some of these have very few plants. Since the 1990s Silene viscaria is thought to have become extinct at a further 11 sites though in one or two of these locations further searches might prove rewarding. This brings the species very close to the 'Vulnerable' classification in the Red Data List which requires less than 10 locations as well as a continuing decline in numbers.

Various reasons for these losses were given by the recorders gorse and shrub overgrowth, tree shading, rabbit and sheep grazing, gorse and bracken fires, rock falls and droughts.

Conservationists will feel that much more could be done to protect the remaining vulnerable colonies from some of these factors.

SPECIES CHAMPIONS

Sticky Catchfly

Sticky Catchfly (*Silene viscaria*) is a very rare endangered plant whose beautiful clusters of pink flowers light up south facing crags at nine sites in Scotland and two in Wales. Its most famous location is on Arthur's Seat opposite the Scottish Parliament where it was first recorded in 1670. The biggest remaining colonies are found on the cliffs of the Southern Ochils beneath Dumyat and Craig Leith in Keith's constituency.

MSP
Species
Champion
Keith Brown



www.scotlink.org
[@SpeciesChampion](https://twitter.com/SpeciesChampion)

Scottishwildlifetrust.org.uk
[@Scotwildlife](https://twitter.com/Scotwildlife)

action needed

1. The remaining colonies must be regularly monitored if extinction is to be avoided.
2. The programmes involving collecting seed and reintroducing seedling plants must be supported.
3. The landowners and managers of Sticky Catchfly sites must be involved planning the plants survival
4. Ensure the Scottish Biodiversity Strategy is fully implemented

threats

Sheep and rabbit grazing of the cliff faces. Overgrowth by gorse and ivy. Gorse and bracken fires. Droughts. Cliff falls. Non-viable colonies with too few plants. Lack of awareness of the species vulnerability.

Plantlife

LINK



To try and raise the profile of this threatened plant we approached our local MSP Keith Brown to become its Species Champion. He did a press event on Arthurs Seat right next to the Scottish Parliament and we hope to get him on some local cliff faces in the future. We have also collected seed and hope to replace some of the lost colonies.

Case Study 3

Lesser Butterfly orchid *Plantanthera bifolia* Scottish BAP Action Framework Species



As part of the Scotland wide study of lesser butterfly orchids we have:

- Monitored 7 LBO sites annually for 11 years
- Followed a cohort of 90 marked plants to investigate their longevity and seed production
- Attempted to identify the plants moth pollinators



Case History 4 Frog Orchid
Dactylorhiza viridis UK BAP Species



The cornstone quarry on Balgair Muir between Kippen and Fintry was once rich in orchids including the Frog Orchid. In 1985 the surrounding area was planted with conifers, excluding grazing animals.



1985



2008



At the suggestion of John Mitchel we started surveying the site in 2006 but by 2009 coarse grasses had over-run the orchids so only 11 remained.

We decided to carry out an annual cut and rake. Gradually the colony has increased in size.

1987	Central SWT save site
1995	50 John Taggart
1997	87 Alison Hannah
2006	76
2007	24
2008	44
2009	11 !!!!!
2010	24 shears
2011	70 shears strim
2012	56 shears strim
2013	34 shears strim
2014	44 shears strim
2015	40 shears strim
2016	76 hard strim
2017	71 hard strim



Stop Press

Since the BSBI conference two weeks ago we have :

- Objected to a planning application on a greater butterfly orchid meadow at Kippen.
- Received an offer of funds to help conserve sticky catchfly.
- And thanks to the persistence of BSBI recorders Liz Lavery and Jane Jones we have heard unofficially that the cattle will be put out on Braeleny meadows after the greater butterfly orchids have flowered.



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20.07.2016 19

NATURE FEATURE

Iconic orchids thriving at Plean Country Park

Roy Sexton, chairman of Stirling and Clackmannans Group of the Scottish Wildlife Trust, on a horticultural success story at Plean Country Park...

Meadows rich in wild orchids are sadly a thing of the past. Changes in agricultural practice like the use of fertilisers and herbicides have led to their loss so that only two per cent of those present in the 1930s remain.

National Meadows Day which was celebrated earlier this month is held every year to draw attention to those which survive.

The meadow in Plean Country Park in front of the ruins of Plean House is an excellent example of a wonderful wildflower meadow which survives largely as a result of the hard work of Stirling Council countryside rangers Jennifer Davidson and Claire Bird.

They arrange for the fields to be cut and the hay removed every autumn which is essential if the wildflowers like orchids are not to be swamped by the growth of scrub.

Five types of orchid survive here. To check that all is well, a count is made of Greater Butterfly orchids every summer on National Meadows Day. With the help of the local Scottish Wildlife Trust Group and other volunteers the four fields around the park were searched and 2800 flowering plants were found, rather more than in 2015.

Scottish Wildlife Trust reports a floral success story

This probably makes the park one of the most important sites for this orchid. To celebrate its 50th anniversary of the last coronation in 2013, Prince Charles initiated a 'Coronation Meadows' campaign to identify wildflower meadows which could be used as a source of the seed to create new meadows.

Stirling Rangers had anticipated this



Welcome sight Great Butterfly orchids thriving at Plean Country Park

scheme and the hay which was harvested from the Plean fields, where the Butterfly orchids were growing, was in 2005 spread on a field that had previously been used for growing potatoes. Greater Butterfly orchid seeds grow underground for between four and five years and before the plants emerge and

flower, and sure enough the first six plants appeared in the ex-potato field in 2009 along with many other meadow plants. Seven years later and the latest count showed the numbers had risen to 300 flowering plants.

After he had written The Origin of Species in 1859, Charles Darwin set out to find examples of evolution and chose to study our native orchids, publishing a book on the subject in 1862.

After finding Greater Butterfly orchids he predicted that the white, highly scented flowers had evolved to attract night flying moths to pollinate them. He pointed out that they are white to make them visible during darkness and the strong sweet scent was principally produced at night when moths are flying.

The local SWT group have shown Darwin's speculation was correct and have caught Gold Spangle moths pollinating the Plean orchids.

To celebrate our wonderful greater butterfly meadow, one of Ian Chalmers' fantastic wooden chainsaw sculptures has been commissioned showing the flowers and their moth pollinators.

It has been placed at the end of the meadow in front of the ruins of Plean House. The Greater Butterfly Orchid flower during July and free maps showing the site are available at Plean Country Park car park.



Totting up Volunteers count up the number of orchids at Plean



Carving Volunteers and rangers alongside the orchid and moth sculpture at Plean Country Park

COMPETITION

Thanks to all the
recorders involved over
the last ten years



Alison Wilson
Alistair Godfrey
Bill Greasley
Bill Parkes
Bob Dawson
Cameron Rae
Claire Bird
Dave Pickett
David
Walkinshaw
Douglas Flynn

Edna Stewart
Eleanor Strain
Emma Gilmartin
Gabi Rice
Grunert
Gordon Rothero
Guy Harewood
Helen McLaren
Hilary Rolton
Jan Harbidge
Jane Jones

Jennifer Davidson
Jim Leddy
Joanna Thomson
Joanne Gibb
John Gallacher
John Holland
John Mitchell
John Snodin
Kevin McCulloch
Laura Kubasiewicz

Liz Albert
Liz Lavery
Lorna Blackmore
Mary Gooch
Melissa Shaw
Michael Christie
Mike Bell
Pam Murdoch
Paul Taylor
Roger Gooch

Roy Anderson
Roy Sexton
Sarah Longrigg
Steve Wilkinson
Stuart Bence
Sue Pringle
Sue Sexton
Tim Brain
Tony Rogers
William Purdie