Spotlight on SSSIs

Working towards the goals of Biodiversity 2020

Issue 7 – December 2015

It is with great pleasure that I bring you the seventh issue of 'Spotlight', the newsletter highlighting the achievements of farmers and other land managers in improving the condition of Sites of Special Scientific Interest (SSSIs).

In this issue we hear from Helen Keep, Senior Farm Conservation Officer of The Yorkshire Dales National Park Authority who tells us about the Raydale Trust and their work with the Catchment Sensitive Farming programme and local farmers to improve the quality of tranquil Semerwater which features as our cover picture.

We have an update on Salisbury Plain, which featured in our first ever issue of Spotlight over 3 years ago. Natural England have been assessing the great expanse of the plain over the last year to gauge the impact of conservation management by the Ministry of Defense and tenant farmers.The full results of the survey are expected early in 2016 and we will report back to you in the June issue of the newsletter.

In October, Natural England met with the Major Landowners Group, comprised of key partners who manage large areas of SSSI. The opportunity was taken to introduce a new way of working for Natural England, called the 'Outcomes Approach' which you can read more about in the full article below. They also enjoyed a boat trip on the river Crouch in Essex whilst discussing strategies for maintaining or enabling sites to reach favourable condition.

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England's network of SSSIs was established as a refuge for our rarest species and habitats, and our most important geological treasures. That's why it's so important that each site is well managed and that it makes the best possible contribution to conservation.

Working together with a broad range of partners, Natural England's aim is to improve the condition of all SSSIs. Our medium term goal, set out in the government's biodiversity strategy, is to have 50 per cent of sites in favourable condition by 2020.

There has been little change in the overall condition of the SSSI series so far this year. However we will have a better idea in the second half of the year once all of the survey information has been analysed. You can read more about some of the sites that have improved in the Report on Progress later on in the newsletter.

Achieving and maintaining favourable condition is not a tick box exercise, it is a long continuous process. However, as this edition of Spotlight on SSSIs shows, the hard work and commitment of partners, land owners and managers will ensure continued protection and improvement to these very important places.

We hope you enjoy this issue.

Rob Cooke
Director, Terrestrial Biodiversity

Safeguarding Semerwater

Helen Keep, Senior Farm Conservation Officer, Yorkshire Dales National Park Authority

Raydale

The Yorkshire Dales is renowned for its magnificent scenery, history and wildlife. Its central valley of Wensleydale is famous for its cheese and long history of dairy farming. And it is within this dale that you find the small, but perfectly formed Raydale, home to the second largest lake in North Yorkshire, Semerwater and the shortest river in the UK, the River Bain.This tranquil dale contains meadows, upland limestone pastures, rough acidic grassland, woodland and blanket bog. It is home to 20 farms of which half are dairy and sheep with the remainder being beef and sheep. Nearly all of the farms have an agri-environment agreement.

Why is Semerwater special?

The large moraine-dammed glacial lake of Semerwater is a SSSI freshwater marl (lime rich) lake noted for its aquatic plants, including water horsetail *Equisetum fluviatile* and yellow water lily *Nuphar lutea*. Its sediments provide a valuable fossil and geochemical record of changes since the last glaciation.The water within the lake is typically nutrient poor – a characteristic feature of marl lakes.

However, Semerwater is shallow (on average 2m deep) and is vulnerable to external factors such as siltation, extreme weather events and climate change. The chemistry of the water is changing due to an increase in nutrients and sediment within the system, reducing the water quality and range of aquatic plants, invertebrates and fish species. The condition of the lake and associated river system has been a concern for Natural England, the Environment Agency, the National Park Authority and the local community for some time and since 2008 a number of projects have been implemented to try and address the key issues:

Raydale Project
In 2008 the Raydale Project was set up by the Yorkshire Dales Rivers Trust and the local community using funding from Carnegie UK Trust to look into how a whole catchment could cope with climate change. The project focused on Semerwater as a valuable asset which is very vulnerable to climate change. The message of catchment management has been disseminated through newsletters, evening events and a programme of environmental work. Three of the most intensive farms have had nutrient management plans and two have had manure management plans. A kilometre of bankside fencing has been installed and trees planted to increase shade. Several gills have been fenced out, and trees planted where appropriate to reduce sediment loss and slow the flow of water.

Catchment Sensitive Farming (CSF) Partnership
In 2009, Natural England approached the Yorkshire Dales National Park Authority and the Yorkshire Dales Rivers Trust to set up a CSF partnership project focused on providing a program of advice, demonstration events, capital grants and newsletters to farmers in order to reduce risk of diffuse water pollution from agriculture.

The project is ongoing and farmers across Raydale have engaged with it and undertaken action to reduce risk. Matthew Bell, a dairy farmer has seen the benefits of this engagement. '*The advice from the project has helped us manage our fertiliser and manure inputs more efficiently so that we are not over delivering nutrients to the soil. We have made best use of agri-environment options, placing them in areas to reduce erosion and improve habitat. In addition, we have put farm tracks in using CSF capital grants which will help reduce compaction. My neighbouring farmers have undertaken similar activities. We are all playing our part in trying to improve the water quality in the dale.'*

Raydale project riverbank fencing and livestock watering point

Agri-environment schemes
Nearly 90% of the farmed land within Raydale has been under Environmental Stewardship Scheme (ESS) agreements. With support from CSF project staff, farmers have identified locations where land management options and capital items will provide maximum benefit in improving the SSSI, wider habitats and water quality. Under three ESS agreements, the catchment heads are being managed and restored to encourage natural regeneration of blanket bog and reduce peat loss.

Is it working?
Improving the quality of the lake and the river system will take a long time, particularly when the lake holds on to some of the sediment and phosphate. Evidence from research over the last four years, has concluded that the problem is more complex than first thought.

However, farmers understanding of nutrient management and care of soils has improved. Within the last three years, six farmers in the dale have been using the CSF capital grant to improve their aging farm infrastructure and reduce or eliminate any risk of diffuse pollution reaching the water courses. This, combined with better grassland and soil management, will gradually reduce the nutrient levels within the river system and lake. Advice delivery, support and engagement is ongoing as there are more improvements to be made.

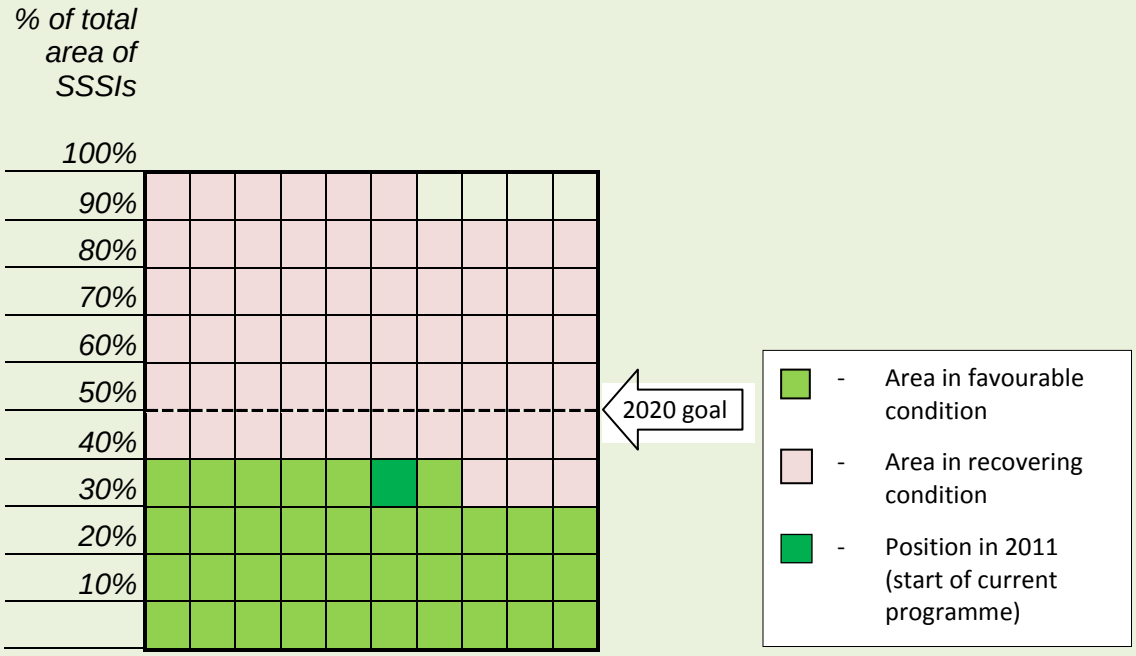
These improvements to Raydale will have long lasting effects on the river system and the lake, improving the water quality and aquatic life and safeguarding it for the future.

Semerwater – a freshwater marl

Achieving the Biodiversity 2020 goals - report on progress

By 2020, the Governments' objective is to see that 50 percent of the total area of SSSIs is in a favourable condition, while at least 45 percent of the remaining area of SSSIs are in a stage of recovery and can be expected to reach favourable condition, once management plans have taken effect.

Each block on this chart represents 100 km^2 – an area roughly the size of Bristol. We need to restore 14 times this area to reach the Biodiversity 2020 goal of 50 per cent of SSSIs in favourable condition.



Progress at October 2015:
- 37.6% of SSSIs are in favourable condition
- 95.8% of SSSIs are in favourable or recovering condition

Change in the overall condition of the SSSI series has been slight since April this year. Most site assessments are conducted during the summer months, however the need to amalgamate information from a variety of surveys means that most assessments are confirmed in the second half of the year.

Some SSSIs that achieved favourable condition between April - October 2015

Teesdale Allotments, County Durham (22 units): 838 hectares.
Teesdale Allotments is comprised of an extensive area of enclosed upland grazings and is one of the most important places for breeding waders anywhere in the uplands of England. Species present includes lapwing, snipe, redshank, golden plover, and black grouse. A comprehensive bird survey showed that while the range of species is now lower than at the time the site was notified, the fluctuation is within an acceptable limit. The condition of habitats that support the breeding bird assemblage was also assessed as favourable condition.

Snipe found at Teesdale Allotments

Kielderhead and Emblehope Moors – great habitat for stonechat and windchat

Kielderhead and Emblehope Moors, Northumberland (1 unit): 152 hectares
The extensive tracts of undisturbed blanket mire and upland heathland Kielderhead and Emblehope Moors supports a diverse range of moorland breeding birds including stable populations of raptors and ravens. The assessment on this unit, known as Deadwater Fell, recorded areas of very diverse blanket bog. Important stonechat and whinchat habitat were identified within areas of bracken and eared willow scrub. The survey also picked up an area of very diverse calcareous fen not previously recorded.

Tarn Hows, Cumbria (1 unit): 31 hectares
This hugely popular Lakeland beauty spot was once owned by Beatrix Potter and is now managed by the National Trust. Its scenic appeal is derived in part from the clear, nutrient-poor, waters of the tarn in which 24 different aquatic plants have been recorded. The whole of Tarn Hows SSSI is now in favourable condition, including this unit which covers a series of diverse and complex mires through which a number of small streams run.

Tarn Hows in the Lake District

Castlethorpe Tufas, Lincolnshire (2 units): 0.5 hectares
This tiny site, part of which borders the M180 motorway near Scunthorpe, preserves a record of a changing environment in layers of Limestone which go back thousands of years. Charcoal in the upper sections of tufa is thought to reflect forest clearance at the end of the early Bronze Age. Blackthorn scrub and willow has recently been removed from 2 units unit preventing it from obscuring this window on the past.

Salisbury Plain: Europe's grassland stronghold

Jonathan Pearce, Biodiversity 2020 Programme Co-ordinator

Over the past year, Natural England ecologists have been scrunitising the huge expanse of Salisbury Plain SSSI to assess the impact of conservation management by the Ministry of Defense and tenent farmers. The full results of the survey are expected early in 2016 and here we take a closer look at the unique habitats and species that are flourishing accross this part of Wiltshire.

Why is it designated?
The site includes the biggest area of chalk grassland in the country, a habitat particularly rich in colourful flowering plants and insect life. Throughout Europe, much of this habitat has been lost over the past fifty years due to agricultural intensification; Salisbury Plain is now its most important stronghold.

Battlesbury Hillfort: the SSSI preserves 40 per cent of England species-rich chalk grassland.

The key grass species of the Plain is upright brome, which forms a tall, tussocky grassland with a rich array of wildflowers such as salad burnet, lady's bedstraw, betony, common rock-rose and dropwort. A large number of nationally rare or scarce plants also thrive here, including purple milk vetch, meadow clary and bastard toadflax.

The Plain holds nationally important populations of two species of butterfly, Duke of Burgundy and marsh fritillary, which have experienced dramatic declines elsewhere in the country. The curious fairy shrimp thrives in temporary pools and deep ruts caused by tanks and military vehicles; while the large expanse of downland interspersed with woodland and scrub, provides habitat for a wide range of birds, including the stone curlew, hobby and hen harrier.

Is the site in an agreement?
The major part of Salisbury Plain is owned by the Ministry of Defence (MOD), which uses the open grasslands for military manoeuvres. As a government agency the MOD is not able to receive agri-environment funding. It leases out much of the land to tenant farmers, each of which is signed up to a management plan which includes measures to protect the features of the SSSI.

Marsh fritillary: this highly threatened species is found in good numbers on the SSSI

How is the site managed, and what are the challenges?
Species-rich chalk grasslands thrive on nutrient-poor soils, which are continuously grazed over many years. On the Plain this is maintained by cattle or sheep grazing without fertiliser. The vital role of Salisbury Plain as an arena for military exercises can be both a help and a hindrance in maintaining the diversity of species.

In the broadest sense, the regular deployment of troops, tank manoeuvres and shelling have prevented the development of modern intensive farming. As a result, the flora and fauna across much of Salisbury Plain exist in a state closer to pre-World War II conditions than the 21st Century. Disturbance caused by the passage of heavy vehicles also helps to create a diversity of habitats, including bare ground and temporary pools.

Grazing cattle and sheep versus tank training and test bombing
The frequent movement of tanks and troop carriers can be detrimental to areas of species-rich grassland, especially during periods of wet weather. In such times, army manoeuvres may be restricted or re-located to prevent damage to the most sensitive areas of habitat. Because cattle or sheep grazing does not mix well with tank training and test bombing, farm planning can be a complicated task on the Plain.
While a certain level of scrub is important on chalk grassland to provide the mix of habitats that birds and invertebrates need, there is a constant threat that grassland can be lost to scrub, a situation that is difficult to reverse. Over the past ten years, a great deal of effort has been put into restoring areas of the Plain that have been invaded by scrub.

Will the site achieve favourable condition by 2020?
Long-established chalk grassland, which forms the major part of Salisbury Plain, can respond relatively quickly to changes in management and for this reason it is expected that most of the site should be in favourable condition by 2020. At just under 20,000 hectares, the SSSI is likely to contribute a greater area to the Biodiversity 2020 target than any other site in southern England.

What will it mean for biodiversity when this site achieves favourable condition?
When Salisbury Plain is in favorable condition the chalk grassland is at its most diverse. If you looked closely at one small patch, you could count plants such as horseshoe vetch, small scabious and purple milk-vetch. In fact as many as 50 species can occur in one square meter.

Stone curlew populations have been steadily rising on the Plain, with 36 breeding pairs recorded in 2011, around 10 percent of the UK population. Six breeding pairs of hobby currently frequent the site, a figure which has been stable for some years. Twelve hen harriers have been recorded overwintering on the site, which is around 5 percent of the national population. Fairy shrimps are found in hundreds of temporary pools; their number and location varying according to the weather.

Viper's bugloss: one of the many colourful plants that typify the Plain

All aboard to manage Sites of Special Scientific Interest

Mike Smith, Manager, Terrestrial Biodiversity

Hot on the heels of Natural England's CEO James Cross' 'introducing the Outcomes Approach' letter to stakeholders in October, Natural England hosted the latest meeting of the 'Major Landowners Group' (MLG) comprised of key national partners, all tasked with delivering the SSSI component of the Biodiversity 2020 Outcomes … on a boat sailing along the River Crouch.

The Major Landowners Group in action

The Outcomes Approach – what does it mean?

- Natural England will focus on what they want to achieve in the real world, rather than on rules and process, striving to work with the grain rather than against it.
- Listening more to those they deal with, agreeing common and shared objectives.
- Looking for every opportunity to establish positive working relationships with stakeholders to achieve the best possible outcomes for our protected sites.

Together with Natural England's board member Simon Lyster, the group took the opportunity to discuss how this new approach would help us to reach our 'Biodiversity 2020' target of having half of all SSSIs in favourable condition.

Simon said 'it is clear that the MLG sees the Biodiversity 2020 Strategy as a 'call to action' for SSSI owners and are busy turning years of investment and hard work on SSSIs into favourable condition on the ground.' I'm sure that the Outcomes Approach will help them achieve it.

All aboard

Usually, these meetings are focussed on discussing joint projects aimed at addressing the issues stopping or slowing the return of many of our SSSIs to favourable condition. Such projects include helping land managers recognise progress towards favourable condition by developing milestones to recovery; improving data sharing and pioneering joined up working locally on condition assessments.

This time however, the group began their meeting by taking to the River Crouch in Essex in boats. Having arrived in the drizzle, setting sail into the wilds of the Essex Coast bathed in sunshine was a relief to all! Spectacular views of the work being done to create the new RSPB reserve at Wallasea Island, the odd burst of flames from the Foulness ranges and regular evidence of coastal squeeze all acted as an exciting backdrop to their discussions.

A shared partnership vision

It was clear from this meeting that there existed a strong desire among members to work even closer together on this important issue, and in particular in the search for more effective and efficient working. For more information on The Outcomes Approach please contact David Slater or if you would like to find out more about the Major Landowners Group, please contact Jonathan Blowers.

The 100 Geosites Project

Dr Hannah Townley, Senior Environmental Specialist - Igneous Geology & Minerals

Do you know what Malham Cove, Upper Teesdale, Hunstanton Cliffs and Kynance Cove have got in common? They are all part of a geological or geomorphological SSSI and have also recently been selected in a public vote held by the Geological Society of London to find 100 Great Geosites in the UK and Ireland. 38 of the selected geosites are found in England, 25 of which make up part of a geological SSSI. The 100 Geosites Project formed part of the Geological Society's activities during the 2014 Earth Science Week and a new webpage has been launched this year to promote the sites and share scientific information about them.

The 100 geosites have been split into 10 categories, capturing a range of different types of and uses for geology. Some reflect areas of scientific discipline, such as the 'fire and ice' and 'folding and faulting'; others categories are much broader such as 'human habitation' or 'industrial and economic importance'. All of the sites offer stories of scientific discovery and endeavour and include museums and attractions as well as outdoor sites. The final list includes a wide variety of sites, evidence of the great variety of geology in the UK. In England these sites include:

Malham Cove, Malham-Arncliffe SSSI
Malham Cove, in the southern part of the Yorkshire Dales, was selected in the *landscape* category. The Cove is a massive, crescent-shaped, vertical cliff cut into Carboniferous Limestone (around 350 million years old). The cliff rises 80m above Malham Cove Rising, where water emerges at the foot of the cliff, and the curved walls extend over 100m on each side of the stream. It is thought that the Cove originally formed as a waterfall caused by meltwater after the last Ice Age (around 10,000 years ago). Today the stream travels underground through the limestone.

80m high limestone cliffs at Malham Cove

Kyance Cove

Kynance Cove, West Lizard SSSI
Kynance Cove is a well-known beach and coastal cliff section at the tip of the Lizard peninsula in Cornwall. It was selected in the *historical and scientific importance* category. The rocks are thought to be Pre-Cambrian in age (older than 600 million years), although their exact date is difficult to pin down. The coastal cliff exposures here provide the best and most famous exposures of the Lizard serpentinite. The exposures at this site provide important evidence to show that the rocks originally formed part of the ocean floor. The unique geology of the Lizard peninsula, particularly serpentinite, forms a unique range of heathland and wetland habitats that support many rare plants and animals.

Upper Teesdale SSSI
Upper Teesdale was also selected in the *landscape* category due to it exposures of the Whin Sill.

The sill is made of a rock called dolerite, which was originally hot, liquid rock that was injected into the surrounding Carboniferous Limestone approximately 300 million years ago. Once cooled, the sill rocks are very hard when compared with the surrounding rocks, and due to erosion, today the Whin Sill forms a series of imposing ridges and waterfalls across northern England.

These include High Force, where the River Tees flows over the lip of the sill to form one of England's most spectacular waterfalls.

Hunstanton Cliffs SSSI
Hunstanton Cliffs in Norfolk were selected in the *coastal* category and are important for education and research.

The cliffs provide exposures through the Lower Cretaceous Red Chalk and the underlying Carstone (around 110 million years old). These shallow marine rocks contain lots of fossils, including ammonites.

Carstone has been used widely in the local area as a building stone and the brown shade of the Carstone buildings led to the town of Downham Market being referred to as the 'Gingerbread Town'.

Breaking news: Since writing this article, due to the recent heavy rain, water has flooded back over Malham Cove which as been a dry waterfall for many year. This hasn't happened in living memory – see the YouTube clip

Find out more about the other selected geosites through the Geological Society's web pages www.geolsoc.org.uk/100geosites, including a description of all 100 sites and an interactive map, or through the downloadable mobile app.

High Force above and Hunstanton Cliffs below

Natural England Field Unit celebrates its first birthday
Andrew Windrum, Manager, Field Unit

It is difficult to believe just how quickly the last 12 months have gone since the Field Unit started last year. But then again no sooner had they started than they were heading out surveying some of our rarest, most valuable sites the length and breadth of the country and they've been busy ever since. After some 10,000ha+ of habitat surveyed, we felt it was time to reflect on how successful this year has been.

Getting over 95% of protected sites into unfavourable recovering condition in 2010 was a significant achievement made possible by the excellent working relationship between Natural England staff and land managers. The ambition now is to get over 50% of sites into favourable condition by 2020 and to demonstrate that we have achieved this target we need to undertake an extensive survey programme between now and then.

To achieve this Natural England decided to embark on a new approach by establishing a national Field Unit. This approach has been used before of course so we wanted to reinstate it after several organisational restructures and staff changes. The recruitment attracted hundreds of applications and after a thorough interview and field assessment process a team of 25 staff were recruited to start in October 2014.

Weather is no barrier to Field Unit work seen here on Dartmoor

The Field Unit

Spring and summer was the busiest time for the Field Unit which, by then, had taken responsibility for over 100 projects. Some of these were small 2-3 day survey projects such as butterfly surveys on chalk grassland and small woodland surveys, and some were much more extensive such as 6,000ha of grassland survey on Salisbury Common and 3,000ha surveying the Ouse and Nene Washes in Cambridgeshire. The larger projects pooled a wealth of expertise with staff from local teams and the Field Unit working together to work on projects only previously made possible by funding expensive survey contracts.

Whilst survey work forms the core of the Team's work, it has also been running an extensive staff training programme covering a wide range of topics from monitoring rivers to using drones for aerial surveys. With 80 courses delivered over the past 9 months, the Field Unit is well on the way to delivering over 100 courses by the end of the year.

In January members of the Field Unit will be transferred to Area Teams and we have recruited another Team to take their place. If feedback received to date is anything to go by then the Field Unit has been a real success and there is a lot of excitement around the new Team. We fully expect they will pick up the mantle from the previous team and we'll report back on progress in a future edition of Spotlight.

Grassland ID, one of over 80 different courses run this year by the Field Unit

If you want any more information about the Field Unit please contact Andrew Windrum by emailing: Andrew.windrum@naturalengland.org.uk

Feedback and contact details

Lastly, we would welcome feedback from you, whether it is about this statement or the service you receive from us. We are constantly looking for ways to improve our service to you and hearing your thoughts is one of the best ways of finding out whether we are getting it right or not.
Please send any feedback to sssi@naturalengland.org.uk

It is the responsibility of the SSSI owner or occupier to update Natural England of changes to contact details or sale, termination or transfer of tenancy.

Please can we have the following details to ensure our records are correct:

- **Your name**
- **Name of SSSI**
- **Postal Address**
- **Email Address you would like correspondence sent to**

Please also let us know if you would like to receive future copies of the SSSI Annual Statement and newsletter. You can email us on sssi@naturalengland.org.uk or call 0845 600 3078

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