



Monitoring the Brue Valley Living Landscape Landowner Advisory Service

H Winter and M Lobleby

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March 2014

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CRPR Research Report No. 38
ISBN 987-1-905892-20-4
March 2014
£10

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1 Introduction and background

This report, prepared by the Centre for Rural Policy Research, University of Exeter for Somerset Wildlife Trust (SWT), describes research conducted to monitor and evaluate the impact of advice delivered by SWT and FWAG SouthWest in the Brue Valley area of Somerset's Levels and Moors. The SWT/FWAG Brue Valley project, funded by the Rural Development Programme for England, operated between 2011 and 2013 and was, in part, designed to support landowners making applications to Entry and Higher Level Stewardship (ELS and HLS) as the Somerset Levels and Moors Environmentally Sensitive Area (ESA) came to an end. A review of ESAs concluded that they had been at least partially effective in maintaining landscapes but less successful in complex environments and that the approach was also less successful in bringing about environmental enhancement. The replacement scheme, Environmental Stewardship, was designed to promote positive management (http://www.naturalengland.org.uk/Images/somerset-levels-moors-esa-rationale_tcm6-29287.pdf). Although Entry Level Stewardship (ELS) is available for all land able to meet the scheme's point threshold, Higher Level Stewardship (HLS) is much more demanding and is a 'competitive' scheme. It was recognised that after 25 years of the ESA not all ESA participants would secure an HLS agreement though would be as well placed as any to do so¹.

Against this background, the Brue Valley advice project sought to encourage landowners into stewardship schemes, alongside other initiatives in the Brue Valley. In reality the Brue Valley Living Landscape project covered a wide area and relatively small areas were targeted for HLS, Advisers from SWT and FWAG helped landowners with stewardship applications either by:

- Acting as the landowner's agent in preparing the application;
- Preparing the Farm Environment Plan which included assessing the fields for existing and potential environmental improvement and mapping them;
- Explaining the opportunities available in both Entry and Higher Level Stewardship and the environmental value of the land; and
- Putting landowners in touch with Natural England.

The advisory service, which forms part of the broader Brue Valley Living Landscape project (which commenced in 2009), was designed to contribute towards the overall aim of restoring, recreating and reconnecting wildlife habitats in this valuable wetland area. Rich in wildlife, the Brue Valley offers a habitat for otters, lapwings, pink southern marsh orchids and other increasingly rare species. However, the wetlands of the Brue Valley are seen as becoming fragmented and vulnerable to inappropriate water management resulting in poor hydrology, changing climatic conditions and farming practices. With the conclusion of ESA agreements experience suggested that farmers would need assistance applying for entry to Environmental Stewardship, and in particular the much more demanding Higher Level Stewardship scheme.

Although SWT and FWAG presently collect quantitative data on, for example, number of visits and number of ELS or HLS agreements facilitated, this is not the same as establishing the effectiveness of advice provision in terms of its impacts on landowner decision making with regard to agri-environmental scheme participation, choice of scheme options, attitudes, understanding, and the nature of land management plans. Consequently the objectives of this research were to:

¹ Expiring Environmentally Sensitive Area (ESA) Scheme agreements and the relationship with Environmental Stewardship (ES): SOMERSET LEVELS AND MOORS ESA. Natural England January 2012.

- Develop and test an advice monitoring questionnaire;
- Monitor the impact of the Brue Valley advice scheme;
- Make recommendations to SWT for future advice delivery.

2 Methodology

In order to monitor the impact of the Brue valley advice scheme we adapted a questionnaire developed for a successful evaluation of advice delivered under Devon Wildlife Trust's Landscape Heritage Scheme in south Devon.² The questionnaire was redesigned in consultation with SWT to ensure that it met their requirements. The questionnaire collected some brief background information on the farm and farmer and explored their experience of receiving advice under the Brue Valley scheme. For farmers with an HLS agreement the questionnaire explored the impact of SWT/FWAG's advice and all farmers were asked about their preferences for receiving advice and the likelihood that they would seek advice from SWT/FWAG in the future.

The questionnaire was tested on one farmer and then during the autumn of 2013 a telephone survey of landowners who had been in contact with either the SWT or FWAG was conducted. Landowners had initially been sent a letter from SWT advising them of the forthcoming survey and its purpose. This letter also gave the opportunity for landowners to opt out of the survey. In total 46 landowners were interviewed from the list of 62 farmers supplied by the two organisations (a 74% response rate). Seven declined, invariably due to pressures of farm work and trying to get tasks completed before the winter, 6 had had very minimal involvement with SWT and it was decided not to interview them, 1 could not be contacted and appointment times with 2 could not be secured.

At this point it is important to mention the devastating impact of flooding on the Somerset Levels in 2011 and 2012³. For nine months of 2012 the Environment Agency was pumping the Somerset Levels after the wettest year on record. By April the ground was saturated and further rainfall over the summer and into the autumn/winter exacerbated this. An estimated 5000 ha were flooded to a depth of 2.5 metres in places⁴. 42 million cubic metres of water lay on the Somerset Levels and 6 billion gallons of water were being pumped off every week. The Moors have not recovered and it will take a number of years for them to do so (Environment Agency TV: <http://www.youtube.com/watch?v=c9Fyq2xZSp0>). Many farmers had businesses damaged. One farmer commented that his land had been flooded fifteen times. The effect of this, in terms of farming practices, farm finances and the psychological impact, cannot be underestimated and is likely to have affected landowners in terms of their recall of specific events around involvement by the SWT and FWAG, their ability to have fulfilled all the options in their HLS scheme and in some cases their attitudes towards environmental organisations.

One farmer in a BBC Somerset news report 4th May 2012 (<http://www.bbc.co.uk/news/uk-england-somerset-17950604>) said floodwater up to 8ft (2.4m) deep is badly damaging land on the Somerset Levels: "We're losing the spring growth, the grass and hay that comes off the Levels for next year's winter fodder for the livestock," "It kills off all the worms, the grass seeds and the ground nesting birds have been annihilated, really, it's bad for farming and wildlife."

² Morris, C., and Loble, M. (2006) Monitoring the Landscape Heritage Scheme. CRR Research Report No 19.

³ This report was written before the floods of 2014

⁴ Morris, J and Brewin, The impact of seasonal flooding on agriculture: the spring 2012 floods in Somerset, England. *Journal of Flood Risk Management*. DOI: 10.1111/jfr3.1204

3 Results

Of the 46 telephone interviews conducted 33 were with landowners/farmers who had received advice from SWT and 13 from FWAG. Please note that some of the percentage figures quoted may not sum to 100% due to rounding.

Respondents were initially asked about how they regarded themselves which revealed that SWT/FWAG have delivered advice to a cross-section of landowners/farmers including just under a 1/3 who are not active farmers (See Table 1). Table 2 indicates that advice was delivered to a range of farmers of different sizes but that most recipients were in the 20-100 ha size range. Most of the respondents to the survey operated cattle and/or sheep enterprises. 69% had solely cattle or related enterprises. Sheep were less common. It should also be noted that a significant proportion of holdings were entirely let, predominantly on a grass keep basis (Table 3).

Table 1 Type of farmer/landowner receiving advice

	Commercial farmer	Grazier	Smallholder	Landowner but not active farmer	Other
Number	18	4	5	14	5
%	39	9	11	30	11

Table 2 Farm size of advice recipients

	<5 ha	-5 < 20 ha	-20 <50	-50 < 100 ha	- 100 < 150ha	-150 < 200	200ha +
Number	3	8	13	11	5	3	3
%	7	17	28	24	11	7	7

Table 3 Farm type

	Dairy	Cattle & sheep	Mixed	Grass keep/rented	Other
Number	4	26	1	13	2
%	9	57	2	28	4

Longevity of occupancy is a striking feature of the landowner sample (see Table 4) and many mentioned that the land had been in family ownership in previous generations too. Some landowners also had familial relationships, often running land blocks together or letting grass keep to family members.

The longevity of farming clearly influenced responses and comments, particularly where SWT was challenged as to its understanding of the complexities and difficulties of farming in the area.

Table 4 Length of occupancy of the holding

	Less than 5 years	5 < 10	10 < 20	20 < 40	40 +
Number of holdings	2	2	5	14	23
%	4	4	11	31	50

A combination of factors meant that interviewees could not necessarily easily recall exactly how they first came to learn of the Brue Valley advice scheme (see Table 5). For example, the passage of time for some landowners since the initial visit has in some instances been quite long. Add to this the age of some respondents and the poor weather in 2011 and 2012 it is not surprising recall is poor. Nevertheless 37% (17) reported being proactively contacted by SWT/FWAG by letter or phone call or by calling in. This last approach was particularly likely on land adjoining SWT's own land holdings. It is also likely that any landowner may have heard from a variety of sources and to pinpoint the first source is in fact very difficult. As one landowner said:

"Farming as normal. Lot of talk about ESA and SSSI land. Letters flying about. NFU held meetings in various pubs and halls. Lot of talk between farmers. Trying to find out what other farmers doing."

Table 5 How advice recipients first learnt about the Brue valley scheme

Contact	%	Number
Another farmer	6	3
Professional contact, including agents	9	4
Printed information	9	4
Letter/phone call/visit from SWT or FWAG	37	17
Website	0	0
Demonstration event/farm walk	0	0
Agricultural show	0	0
Other	11	5
Cannot recall	28	13

Farmers reported a number of reasons for accessing the Brue Valley advice service (see Table 6). As anticipated by SWT in their application for funding for the advice service, the overwhelmingly important factor for landowners was to find a replacement grant scheme for the ESA which was coming to an end or to gain a better understanding of the new schemes before making a decision to go forward.

The Somerset Levels and Moors ESA was designated in 1987. Nationally, the basic level of the ESAs scheme, Tier 1 or 1A depending on the ESA, aimed to maintain the conservation, landscape and historical value of the key environmental features of an area and, where possible, improved public

access to these areas. Tier 1 was compulsory for all ESA agreements. Applicants could then choose to enhance these features further by opting into the higher tiers of the schemes.”⁵

Table 6 Reason for accessing Brue Valley advice scheme

Reason	Finance related, including scheme replacement for ESA	Understanding of schemes	Wildlife related	Initiated by SWT	Other (including no recall of contact)
Number of respondents	25	6	5	3	7
%	54	13	11	7	15

The Somerset Levels ESA offered three main management options:

- Maintenance of extensive grassland and the maintenance of water levels, ditches, gutters, trees and pollarded willows (Tier 1A)
- The enhancement of wet grassland by controlling water levels modifying a range of management practices (Tier 2)
- The maintenance of grassland by raised water levels (Tier 3)

The HLS options for the same area are more varied and their management is frequently more demanding (see Table 7).

Table 7 HLS management options suitable for the Brue Valley

HLS Option Code	Option	Payment	Unit
HB14	Management of ditches of very high environmental value	£36	100m
HE10	Floristically enhanced grass buffer strips (non- rotational)	£485	ha
HK6	Maintenance of species-rich, semi-natural grassland	£200	ha
HK7	Restoration of species-rich, semi-natural grassland	£200	ha
HK9	Maintenance of wet grassland for breeding waders	£335	ha
HK10	Maintenance of wet grassland for wintering waders and wildfowl	£255	ha
HK11	Restoration of wet grassland for breeding waders	£335	ha
HK12	Restoration of wet grassland for wintering waders and wildfowl	£255	ha
HK15	Maintenance of grassland for target features	£130	ha
HK16	Restoration of grassland for target features	£130	ha
HK19	Raised water levels supplement	£80	ha

⁵ Expiring Environmentally Sensitive Area (ESA) Scheme agreements and the relationship with Environmental Stewardship (ES): SOMERSET LEVELS AND MOORS ESA. Natural England January 2012.

Under the Brue Valley scheme both SWT and FWAG were instrumental in contacting landowners and advising them on the potential to gain HLS or ELS payments for land management. It is evident from the results that both organisations played a major role in preparing full applications, including the important mapping of information for the Farm Environment Plan (see Table 8). Although Natural England had a target to increase the area of land in HLS it also expected to do so at reduced unit cost due to a reduction in the Rural Development Programme budget.⁶

The involvement of partner organisations was therefore key to increasing take-up of the scheme and SWT and FWAG were able to take applications through to a stage where they could be approved by Natural England⁷. 29 of the participants in our survey who had received advice as part of the Brue Valley scheme reported having an HLS agreement, 16 were not in HLS and 1 did not know. Nine respondents were solely in ELS but not HLS and five were in neither scheme.

During the course of advice some parcels of land were deemed of insufficient quality for an application to HLS but remained in ELS. Respondents cited for example, hill land or land nearer the settlement as being in ELS whereas land on the Moors was in HLS.

Table 8 Service provided by SWT/FWAG in Brue Valley

	ELS advice	Prepared HLS application including FEP	3 rd party HLS application but SWT/FWAG prepared FEP	Explained HLS opportunities	Other ¹
No. of respondents	18	24	1	4	10

¹ Includes some cases where SWT visited farm post application. It is also possible that respondents have underestimated SWT’s involvement as in one case the farmer thought the SWT advisor was from NE.

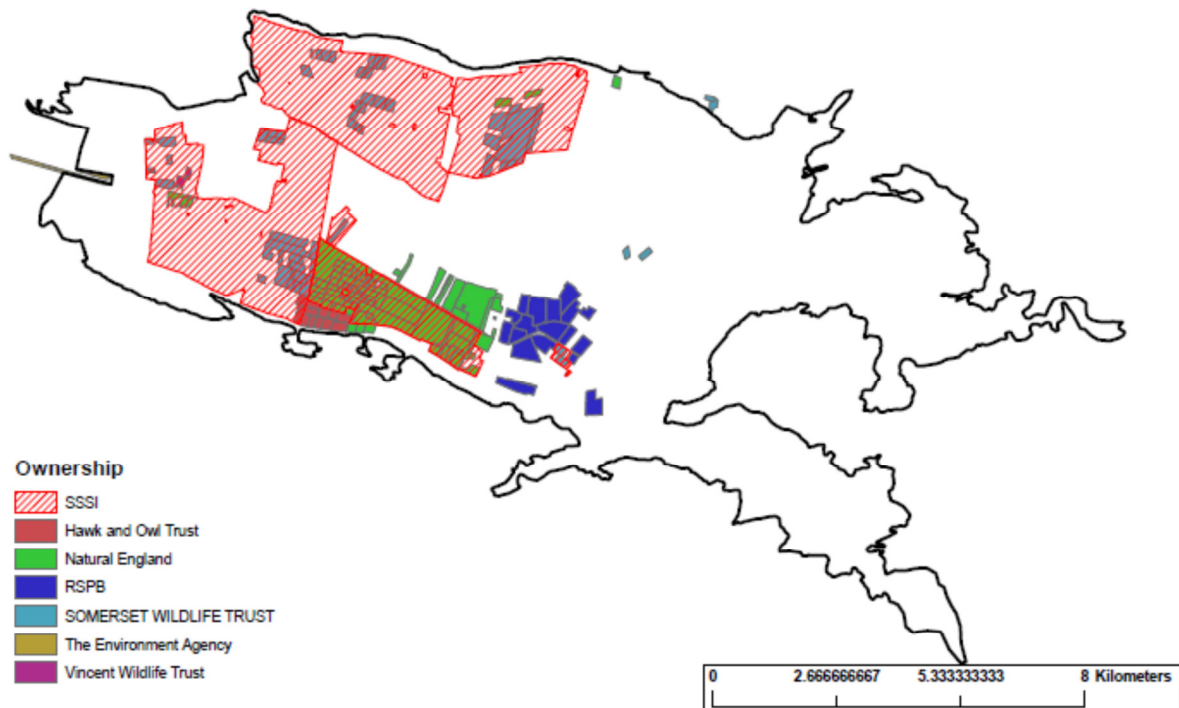
Of the respondents in HLS, seventeen also had land designated as a Site of Special Scientific Interest (SSSI). Originally it was not the intention of SWT to provide advice within SSSIs, preferring to extend environmental benefits in other areas. However, when it became apparent that there would be only limited scope for HLS agreements outside of the SSSIs and that Natural England would be under pressure to cope with the expiring ESA agreements in the SSSIs SWT and FWAG understandably focused their efforts on encouraging landowners to enter SSSI land into a HLS agreement. A significant area of the Brue Valley is designated as SSSI (see Figure 1) and although some is already in conservation ownership much is not. Therefore encouraging landowners to enter land into HLS will help achieve SWT’s aim of restoring and reconnecting wildlife habitats. As scheme providers Natural England has had a target of ensuring 95% of SSSI land is in a favourable or improving condition. One of NE’s six performance measures to be reported on to Defra in 2011/12 was “to increase the area of Sites of Special Scientific Interest in favourable condition whilst maintaining 95% area in favourable

⁶ Natural England Board paper – 25 May 2011. Chief Executive’s Report.

⁷ From July 1st 2011, Natural England introduced a 3-tier process depending on the complexity of application. **Fast track** – Suitable for holdings where only one Natural England visit is required. The Farm Environment Plan (FEP) is produced by Natural England. **Standard** – Suitable for all other holdings and where a maximum of two visits by a Natural England adviser is required. The FEP is produced by FEP surveyors and/or third party agents. **Complex** – Suitable for the most complex holdings. Complex cases may require up to four Natural England adviser visits. The FEP is produced by FEP surveyors and/or third party agents. (http://www.naturalengland.org.uk/about_us/news/2011/290611.aspx)

or recovering condition.”⁸ Entering land into HLS would help secure targets for SSSI condition, as well as HLS targets. One landowner implied that pressure was exerted to get SSSI land into the HLS scheme. Interestingly, where there was most criticism of the process of applying to HLS, and the length of time taken, this was on non SSSI land. This could be because NE prioritised SSSI applications in the HLS ‘pipeline’ in order to meet their SSSI targets, leaving non-SSSI applicants with a longer wait and, in some circumstances, a gap between ESA expiry and the start of a new HLS agreement.

Figure 1 Land in conservation ownership/management in the Brue Valley



Source: SWT

The complexity of the HLS process was mentioned by farmers. For example:

“with the HLS agreements numerous different types of agreement are in place. With the old ESA blanket agreement - knew prescriptions. Farmers all knew what agreement consisted of and what they were all doing. HLS - farmer next door can have a different agreement. Turn cows out in May. Neighbour may have different times. All in same agreement but with little tweaks. Don't think that's good.”

The complexity and precision of the scheme agreements can be seen from the detailed sample prescriptions for HK15 – Maintenance of grassland for target features (£130/ha) and HK10 – Maintenance of wet grassland (£225/ha) in Appendix 1 and Appendix 2.

From comments made by some respondents it was apparent that the percentage of the overall land holding in HLS was markedly different, ranging from the whole of a small land area to a few hectares of a sizeable land holding, 15% and 25% being mentioned in a couple of instances. This differentiation is likely to affect how landowners perceive HLS and its impact on their farming strategy on a day to day basis and the focus on environmental improvement.

⁸ Natural England Board Meeting, 25 May 2011. Chief Executive’s Report

Where land was let, landowners had frequently secured the HLS agreement themselves, using contractors or people renting the land to deliver the options. But other arrangements also apply. As one landowner commented:

“Two of fields I've got agreed for people taking grass to go into stewardship. Allowed people buying grass to do that.”

From Tables 9 and 10 it is clear that SWT and FWAG have been successful in encouraging HLS participation across the range of farm sizes and types although it is important to note that where farmers have let out land the survey will not have picked up all the instances where tenants have applied for HLS. 8 of the holdings surveyed were let and cover an area in excess of 235 ha. This land is frequently let on an annual grazing licence often, but not always, to the same person each year. Sometimes those renting land have an HLS agreement on their own land so are aware of the requirements of the scheme. In other cases though there is a concern as to whether the tenant is then aware of the requirements of the scheme. One landowner with a variety of let land arrangements commented that he “did not go for (enter) land where (he) thought there might be problems” e.g. if the grazier was unlikely to be compliant. “Did not want to deprive farmer of ground” or reduce the grazier's ability to farm intensively.

Table 9 Size of farm and whether in HLS

	<5 ha	-5 < 20 ha	-20 <50	-50 < 100 ha	- 100 < 150ha	-150 < 200	200ha +
Number	3	8	13	11	5	3	3
In HLS	0	6	5	9	2	2	3

Table 10 Type of farm and whether in HLS

	Dairy	Cattle & sheep	Mixed	Grass keep/rented	Other
Number	4	26	1	13	2
Number in HLS	4	15	1	8	1
% in HLS	100	58	100	62	50

Of those without an HLS agreement it was suggested (by SWT/FWAG) in three instances that the land was suitable for HLS. Reasons given for not applying to HLS varied but largely reflected a degree of antipathy towards contemporary conservation management and the desire to farm unencumbered by bureaucracy and interference:

- Workload too much. Cannot commit to physical work at my age.
- Too fussy about it all. Too many restrictions. Used to be an area of small farms with a great diversity of management levels. Advisers young with qualifications but no experience of the area. Habitats better than 60 years ago. Problem - predators - badgers, buzzards, mink and more grey squirrels and foxes. Cannot keep hens without keeping them close to the house. Too fussy about ditches. If go to expense to meet requirements and then not up to standard could be worse off. Land in such a state - mostly weeds.

- Did not want to be told what they wanted me to do. In minute will be telling me what times want to do things. Cannot change nature.

3.1 Impact of advice from SWT/FWAG

Respondents with an HLS agreement who had received advice on their application from SWT and FWAG were asked to rank on a scale of 1 to 5 whether they ‘fully agreed’ or did ‘not agree at all’ with a series of comments. HLS agreement holders whose agents or Natural England had put in the application were not asked this question. The results presented in Table 11 indicate that the majority of respondents were generally very positive about the impact of the advice they received. The area where the advice was most appreciated and valued was in terms of securing an HLS agreement. Landowners, particularly active farmers, are very busy and particularly so due to the weather conditions, and increasingly faced with bureaucracy and stressful events such as TB testing. The ability of the SWT and FWAG to assist with and complete much of the paperwork associated with the HLS process was a significant factor in encouraging landowners to proceed with the application and, importantly, within the scheme deadlines.

Table 11 Impact of SWT/FWAG advice

	Fully agree	Agree somewhat	Neither agree nor disagree	Disagree somewhat	Do not agree at all
	1	2	3	4	5
Advice easy to understand	44%(12)	41%(11)	15% (4)	0% (0)	0% (0)
Useful route to getting HLS agreement	70%(19)	22% (6)	4% (1)	0% (0)	4% (1)
Helped in understanding purpose of HLS agreement	41% (11)	37% (10)	18% (5)	4% (1)	0% (0)
Helped understanding of management requirements of HLS agreement	37% (10)	33% (9)	30% (8)	0% (0)	0% (0)
Helped understanding of expected environmental outcomes	33% (9)	26% (7)	26% (7)	11% (3)	4% (1)
In absence of advice would not have applied to HLS	30% (8)	0% (0)	11% (3)	15% (4)	44% (12)

Although initially landowners found the advice easy to understand it is clear that overall understanding of the management requirements and particularly the environmental outcomes is less secure. The HLS scheme is undeniably more complex than the ESA with a much wider range of potential options and detailed management requirements, as illustrated in appendices 1 and 2, that it is difficult for landowners to fully appreciate the environmental outcomes in specific terms. One way of judging the impact of the Brue Valley advice scheme is whether it encouraged farmers to apply to HLS who in the absence of the scheme would not have applied. Such assessments are not easy. However, evidence from the survey indicates that 30% of participants strongly agreed with the statement that ‘in the absence of advice I would not have applied to HLS’. On the other hand, 44% did not agree at all with that statement. That said the results presented in table 11 indicate overall that farmers benefited from the advice and that in a number of instances SWT/FWAG’s advice resulted in applications to HLS that would have quite likely not occurred in the absence of the advice

scheme. There are also indications (see Table 12) that this impact is particularly associated with smaller farms.

Table 12 Size of farm and whether would still have definitely applied for HLS regardless of advice

	<5 ha	-5 < 20 ha	-20 <50	-50 < 100 ha	- 100 < 150ha	-150 < 200	200ha +
Number	3	8	13	11	3	3	3
Definitely Applied	0	1	4	4	0	1	1
Definitely Not Applied	2	0	3	2	0	1	0

For many landowners not applying was simply not an option given that ESA agreements were concluding and that HLS offered a financial scheme to replace or partially replace that income stream. Farm Business Survey data⁹ indicates that for the South West region as a whole in 2011/12 Farm Business Income (the equivalent to Net Profit) for lowland livestock farms was on average £27,708 (although it was likely to be considerably lower for farms on the Somerset Levels). Lowland livestock farms received on average £4,307 in agri-environmental payments and over £16,000 under the Single Payment Scheme (SPS). Many farmers make a loss on the agricultural element of their income. The combination of SPS and agri-environmental payments help many farmers survive. For instance one respondent reported that without income from agri-environmental schemes he could not survive having lost £11,000 on his agricultural account in the previous year and a further £6,000 in the last year. Another farmer, although grateful for continuing agri-environmental payments reported a “30% reduction in money received from HLS compared with ESA.”

Participants in the survey who had received advice from SWT/FWAG and who had an HLS agreement were asked to rate the overall usefulness of the advice on a scale of 1-5 where 1 was ‘very useful’ and 5 ‘not useful at all’. 37% (10 farmers) said that the advice was very useful with 67% of farmers scoring the overall usefulness of the advice as either 1 or 2. No respondents stated that the advice was not useful at all.

Where advice had not been so useful, landowners made the following comments which reflected both the scheme complexity and some issues around how SWT/FWAG explained the process and potential options. In addition, some of the comments reflect the perception that advisors lacked sufficient knowledge of local agricultural practices:

- Did not put much management time into costing it out. Costs would vary from contractor to contractor. In ESA 20 odd years - did not really consider environmental outcomes or purpose. For commercial farmers difficult to assess whether financially worthwhile. Got to do ditches, trees, etc. Got to work out costs. Signed up to HLS but not sure of costs. Problems of weather. Did not have information in advance.
- Could have someone who knows lay of land. Sometimes silt from flooding useful. Should have paid farmers to stay small. Shouldn't fill up ditches and get rid of all rushes. SWT think shouldn't pound ground. Timing on what should do and when. Banks and ditches to be cut

⁹ <http://www.farmbusinesssurvey.co.uk/DataBuilder/>

tight but like to leave a bit for butterflies and creepy crawlies. (SWT) no idea about some things. Different names for things. Use term - griping. Wanted to harrow/row in winter no good.

- SWT - as individuals think know what going to achieve. I'm only in it from an agricultural perspective. Fair few conservation bodies. Evident that they have not actually been able to map out the full consequences of what they do. Whether habitat changes are good, bad or indifferent I don't know.
- I had to go through all the paperwork. Other things I could have claimed for (in retrospect and after discussions with Natural England) and would have benefited land.
- Trouble is don't really know the land. Wet season cannot do a lot. Rivers come over. Hangs about most of the year. On really low part of the Moors - that's how it goes.
- (we are) competent and up to date. Simpler things did not need to say.
- Did not bring up environmental outcomes. Talked about various things all the time. Could have explained it better. Could have gone into more detail. Perhaps he had a lot of work on and only had so much time.
- Yes, a bit muddled at times. Bit scattergun. Busyness of person involved. Other things to do. Better to sort in short time period. In ESA before but no SSSI - made it more difficult. Times when had to wait for an answer. SWT not always in control of the process. Confident that would get job done. (SWT) had to coordinate other landowners.

In total 26 respondents (out of 46) made some adverse comments although the negative comments were not reflected consistently in terms of responses about the impact of SWT/FWAG. Some tempered comments with positive comments as well. As the examples above indicate, unfavourable comments covered a range of topics. 14 respondents commented negatively on their perception of SWT's knowledge of farming/conservation; 13 referred to the HLS application process; 13 raised the issue of HLS options; 2 were concerned about the costs to the landowner and 7 respondents made non-specific negative comments. One of the difficulties experienced by SWT/FWAG was that they were advising on entry to schemes and suitable options but, at the end of the day, have no control over the scheme prescriptions. This may well have influenced comments about understanding of the land, for example, the timing of haymaking.

For groups of non-SSSI applications SWT had to get the agreement in principal of a number of applicants to achieve an area of habitat sufficient to meet NE's HLS targeting. The viability of these non-SSSI applications was also dependent upon SWT convincing NE that groups of landowners could agree on appropriate water management and raising funding for new water control structures to facilitate water management. Agreement on water management was made more difficult by a combination of flooding and changes in the water supply implemented by the Environment Agency. These factors, coupled with the lower priority of non-SSSI applications in the HLS 'pipeline' resulted in delays. SWT are aware that these factors had a direct impact on some landowners' enthusiasm for HLS.

In terms of the way in which advice was delivered to farmers who now have HLS agreements Table 13 indicates that face-to-face was overwhelmingly the most important. Where a second choice was provided the most popular was bespoke written advice. This was often sent following the initial face-to-face session on the holding. Given that the HLS application required both a form and a farm plan the emphasis was on walking the farm so face-to-face contact was seen as critical to informing

the landowner/manager and as a pre-requisite to completing the application. The bespoke letter however helped the respondent to recall the discussion that had taken place (see example below).

Extract of a letter from a SWT adviser to a landowner following a visit

Higher Level Stewardship (HLS) support

I have pleasure in sending you a list of the more interesting plant species that I found on the HLS survey I carried out on your holding together with photographs (not all species are illustrated). The ditches [details removed to preserve anonymity] tend to have a great range of species, and are more species-rich than most ditches in the Brue, reflecting the fact that no artificial fertilisers are used nearby, there isn't too much shading and they are cleaned regularly. The terrestrial wildflower species were all found in the 2 fields earmarked for HLS.

It is largely due to the presence of these plants in your 2 fields and their boundary ditches that you are in line to enter into HLS, and many of them will be 'indicators of success' for your scheme (the indicators will be listed under each option in your HLS folder). As I am sure you are aware, the [name removed to preserve anonymity] area still has an unusual concentration of wildflower-rich meadows, thanks to many farmers continuing to farm in an extensive way, and HLS is aimed at helping farmers to continue to be able to manage the meadows extensively.

Birds are also key features of the HLS scheme - your holding may support waders over the winter months, such as lapwing and snipe.

The letter continues with some further detail and an offer of support once HLS is up and running with contact information.

Table 13 Most useful form of advice delivery

	Face to Face	Advice over the phone	Advice at group events	General printed advice	Bespoke written advice
Number of responses	92% (26)	4% (1)			4% (1)
2nd response (where given)			22% (2)	11% (1)	67% (6)

Table 14 Impact of SWT/FWAG on the HLS application process

	Much easier than expected	A little easier than expected	No different to expected	A little harder than expected	Much harder than expected
Number of responses	11	11	5		

It is clear from Table 14 that landowners with HLS appreciated the difference SWT and FWAG had made to the application process. Undeniably a more complex system than the ESA it was important that landowners were able to apply for all available options and ensure the farm was mapped as part of the application. Where landowners are increasingly pressurised for time the availability of free, face to face advice was invaluable.

Other than general comments about help with completing forms and reducing the level of worry, specific responses were as follows:

- They (SWT) talked to Natural England and sorted out points. Try and get things. Meeting with SWT adviser and Natural England where we went through what we could do and what ground we could put in. Came up with a scheme. If did not have that advice would not have attempted to try.
- Did work for me. (We) sat for a few hours and application done.
- Contacted at right time to ensure had a chance to do it. Kept to deadlines, kept things going.
- At the time it was very difficult to get in the ELS. Times when not accepting more. Land on SSSI - very keen to get it in scheme so that probably helped - useful tool. FWAG did good job. Had to get in ELS first to be considered for HLS.
- Always there. Came and discussed it. Asked opinion on phone afterwards.
- When someone explains [it's] not so complicated. Gives you confidence. Can talk over things you've got reservations about. In letter form not so good.
- Not versed in process. Totally laymen so expertise very valuable.
- Understanding the point system for HLS most important thing. Literature from Natural England. - Did not think ground qualified other than for entry level so would not have looked at it. Entry level did not add up financially. ELS does not warrant loss of production.

The importance of the SWT and FWAG in 'keeping their eye on the ball', meeting deadlines and providing support throughout the process was an important factor.

One landowner felt he could have done the application, except the Farm Environment Plan, but was not an approved independent agent and another said it would have taken longer to do as he would have had to read the rules and look at the structures.

3.2 Summary of HLS options

Landowners were provided in some, but not all, instances with a laminated summary sheet explaining the options in brief related to specific fields and features. Respondents were asked whether this had been helpful. As SWT had not provided this information on a consistent basis it was not entirely clear whether landowners did not recall because they had not received the information or because they did not remember the sheet. Some also mentioned a summary from FWAG and from Natural England, as well as the more comprehensive scheme booklet.

Table 15 Recall of laminated summary sheet specifically from SWT

	Yes	No	Unsure
Number	9	9	6

Example laminated summary sheet for HLS agreement (farm map excluded)

This document is intended only as an overview of management required under your stewardship scheme – please also refer to your Stewardship Agreement documents issued by Natural England. For example, Part 3 Page 1 provides some overall guidelines additional to those below. Part 3 also provides full details of management requirements, and indicators of success

HK10 - Wet grassland for wintering waders and wildfowl

Ditches and gutters

- Clean out weed from field ditches no more than 1 year out of every 3 on rotation.
- De-silt field ditches no more than 1 year out of every 10.
- Do not do any work on ditches between 1st April and 30th August.
- Graze ditch banks, and cut any ungrazed banks after 1st July. The use of permanent or temporary fencing along ditch edges is **not permitted**.
- Maintain existing field gutters and their junctions with ditches. Aim to manage 25% to 33% of gutters each year.

Field

- Do not top, roll or harrow between 1st April and 30th June, and only treat up to 50% of your total grassland in any one year.
- By November, the grass sward should be a mix of shorter grass and tussocks ranging from 5 – 15cm.
- In years where a hay cut is taken – Cut and remove between 1st July and 31st August and graze the aftermath.
- In years when managed as pasture – Graze for at least 6 weeks between 1st May and 30th November at a maximum stocking density of **2.5 livestock units per hectare**. Flail or top ungrazed patches after 1st July.
- Protect the soil from damage. Up to 5% poaching is acceptable.
- Supplementary feeding is confined to home produced hay spread by hand, with mineral blocks if required.
- For rush management see your HLS folder (**Appendix (b)**). No weed wiping before 1st July. Soft rush cover should be less than 30% of a field.
- Do not apply fertiliser, only farmyard manure, and not within 10m of a ditch edge.
- Do not disturb any birds on your fields between 1st December and 31st March by non-essential activities

HK15 - Maintenance of grassland for target features

Ditches and gutters

- Manage as is described for **HK10**.

Field

- Manage as is described for **HK10** except:
- In years where a hay cut is taken – Cut can be taken after **1st June**.
- In years when managed as pasture – Graze for at least 6 weeks between 1st May and 30th November at a maximum stocking density of **2.5 livestock units per hectare**. Earlier or later grazing is permissible if weather conditions allow. Cattle grazing is preferred. Sheep grazing isn't excluded, but bear in mind that the grass should have at least 10% tussocks.
- Flail or top ungrazed patches after **1st June**.
- No weed wiping before **1st June**.
- Do not top, roll or harrow between 1st April and **31st May**.
- No new drainage.

HR1 - Cattle grazing

- Only graze the fields under the HK10 option with cattle; dates are from 1st May to 30th November at a maximum stocking density of **2.5 livestock units per hectare**.

Capital Works – Removal of scrub in field [detail removed to help preserve anonymity]

- Carry out work in Autumn/Winter between end of September and mid-March to avoid disturbing nesting birds.
- Paint stumps with approved herbicide – do not spray.
- Avoid burning cut scrub on site – remove and burn or burn on raised metal sheet.
- Flail and/or graze regrowth.
- Refer to **PART 5** of you agreement for full details **before works are performed**.

The uncertainty is evidenced by one comment “got all that information – laminated sheet and booklet. Thinking about it I don’t think I have got a laminated sheet. Will have to check. Good summer this year, has helped a lot. Have been looking at the booklet”.

Where there was recall of the laminated sheet it was clear that the summary was very useful, avoiding the need to look through the full information each time. One landowner said he had “Put (the laminated sheet) in file, can read, monitor and take on board. Can refer to it.”

3.3 The wider use and impacts of advisory services

All respondents were asked whether they would approach SWT or FWAG for advice in the future. 13 respondents reported that they would approach SWT/FWAG, 16 thought that they might approach them for advice and 17 reported that they would not approach SWT/FWAG for advice in future.

Justification for these answers was given in some instances:

- If enough money in it
- FWAG only. Wouldn't waste time with SWT
- According to what I don't understand. Don't know what's round the corner.
- Because may be another scheme coming in when ELS finishes in a couple of years.
- Depends - needs to be more dialogue.
- If up against anything don't understand.

Those farmers who stated that they would not approach SWT/FWAG for advice in future offered a number of explanations such as:

- Always done things way have. Will carry on.
- Would go straight to NE - better understanding
- Know NE. More likely to contact them
- Not at my age!
- If came round as said they were going to. Supposed to come round.

The last bullet point may reflect a misunderstanding or the failure to keep an appointment¹⁰ but it clearly indicates how easily farmers working in difficult conditions can become disaffected.

Clearly SWT and FWAG are only two of a wide range of organisations potentially able to provide advice to farmers and landowners in the area. Respondents were asked whether they had sought any information and advice on environmental matters from a range of organisations over the past five years (Table 16). This is an area where the weather events of the past couple of years may have affected recall. The organisation contacted most frequently was Natural England, which is largely a reflection of NE’s role in delivering HLS.

¹⁰ This was not the only comment of this nature.

Table 16 Advice from other organisations

Organisation	Yes	No
Defra	5	36
National Trust	0	41
RSPB	0	41
ADAS	0	41
Natural England	18	24
Local Authority	0	41
Environment Agency	5	36
Game and Wildlife Conservation Trust	0	41
Soil Association	2	39
NFU	1	40
CLA	1	40
Other sources	8	34
None	11	30

Table 17 indicates the type of advice offered by/requested from different organisations. HLS aside it is perhaps not surprising that most advice relates to various aspects of ditch management and water levels/flooding.

Table 17 Type of advice from other organisations

Organisation	Type of advice	Number of mentions
Natural England	Advice on re-seeding fields post flooding	1
	HLS rules and application and time delay agreements. Change from ESA to HLS	12
	Meeting with CLA. General meeting about HLS/ELS	1
	SSSI and designated land	2
	Rush control	1
Defra	Spraying ditches	1
	Water levels on Moor	1
	Waste	1
Environment Agency	Polluted ditches	1
	Cattle getting on land through broken gates	1
	River banks and rubbish post flooding	1
	Registration for handling muck, burning hedge trimmings	1
	Water levels	1
Soil Association	Organic milking	1
	Soil management	1
NFU	Dairy intensity	1
Other - agent	Cross-compliance and compliance with ELS and other scheme rules	2
	Burning of hedge trimmings, waste disposal, current environmental legislation	2
	Information	1
Other –Drainage Board	Discuss ditching and spoil	2
	Location of cattle drinking pits.	1

Respondents offered a number of comments about advice from NE:

“(have an) ongoing dialogue with NE. Good working relationship. Discuss opportunities, discussed HLS. Don't discuss at micro-level but broad concepts. Advice useful. Have to work with them. People with responsibilities for SSSIs [are] practical.”

“some fields poached. Had advice on drilling fields so suitable for hay. Advice helpful - came and had a look and then called back.”

“gutters - improving gutters to let last year's water out and water back in in the summer. Useful - recommended what to do and that's worked satisfactorily. Depth and width of gutters.

Interestingly, two farmers specifically mentioned a demonstration on cutting rushes and using a weed-wiper. Although the event was managed by SWT and FWAG (see Figure 2), both farmers mistakenly thought the event had been organised by a government agency.

Figure 2 SWT Wetland Machinery Event

Wetland Machinery Event

On 23rd July an event was held near Greylake to demonstrate techniques for managing soft rush infestations to farmers. It proved very popular with nearly 100 farmers and their families attending, representing some 70 farm businesses. Bigwoods Agri Ltd, who part-sponsored the event, were on hand to demonstrate various flails, weed wipers, quadbikes and tractors, and contractors Richard Ayles and Richard Duckett demonstrated a quad-pulled weed wiper and heavy-duty mulch-topper respectively.

The field used for the demonstration had an abundance of the tussocky soft rush that is all too common on the Levels and Moors. The RSPB had weed-wiped the year-old soft rush a month earlier using a glyphosate-based herbicide. Just one pass with the Rotowiper produced a fair rate of kill at around 60%. However, better rates of kill tend to be produced on rush regrowth following cutting.

The event was managed by Farm Liaison Officers from the Somerset Wildlife Trust, FWAG and the RSPB, and part funded by the European project the Value of Working Wetlands. Staff of Natural England also attended.

For information on contractors and local farmers who carry out weed-wiping and heavy duty flailing, please contact **Catherine Mowat** (on 01823 652416) or **Abi Vickery** (FWAG) on 01823 355427.

The project is currently planning more events in your area. Look out for machinery events involving guttering and ditching contractors during late summer and autumn 2013.



Richard Duckett's heavy duty Muthing mulch topper



Richard Ayles with his Rotowiper weedwiper



McConnel flail-topper and Deutz-Fahr 109hp tractor



Quad-X Wipeout weedwiper brought by Lincoln and Gary Hall

Photos: ©David Leach and Stephen Dury

Contact: Catherine Mowat tel: 01823 652416 email: catherine.mowat@somersetwildlife.org 3

When asked how they prefer to receive advice participants in the survey overwhelmingly endorsed a preference for face to face advice (Table 18).

Table 18 Preferred form of advice in general

	Face to face	Telephone advice	Advice at group events	General printed advice	Bespoke written advice	General advice from website
Number of respondents	33	6	1	2	2	1
%	73	13	2	5	5	2

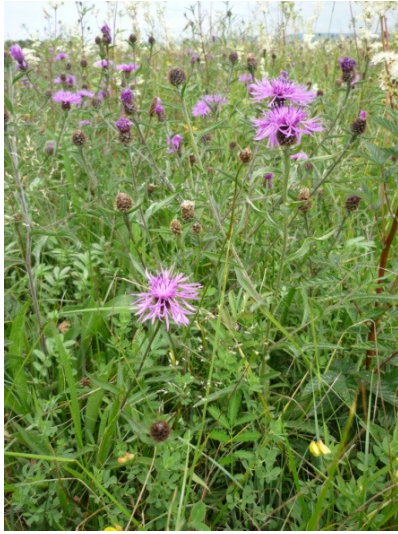
Following the farm visit the SWT often sent a letter and sometimes more information on plant species, either as a list or as plant photographs. For example:

Selection of wildflower species noted on the holding during pre-HLS surveys in 2012

These are relatively uncommon species that indicate Habitats of Principal Importance such as Lowland meadow and Purple Moor-grass and Rush Pasture. Please feel free to contact [name removed] should you require more information (contact details below).

Grasses, sedges and rushes	
Brown sedge	<i>Carex disticha</i>
Carnation sedge	<i>Carex panacea</i>
Common sedge	<i>Carex nigra</i>
Glaucous sedge	<i>Carex flacca</i>
Heath grass	<i>Danthonia decumbens</i>
Sharp-flowered rush	<i>Juncus acutiflorus</i>
Wildflowers	
Amphibious bistort	<i>Persicaria amphibia</i>
Autumn hawkbit	<i>Leontodon autumnalis</i>
Common cat's-ear	<i>Hypochaeris radicata</i>
Common knapweed	<i>Centaurea nigra</i>
Common marsh bedstraw	<i>Galium palustre</i>
Common sorrel	<i>Rumex acetosa</i>
Cuckooflower or Lady's-smock	<i>Cardamine pratensis</i>
Greater bird's-foot-trefoil	<i>Lotus pedunculatus</i>
Meadow buttercup	<i>Ranunculus acris</i>
Meadowsweet	<i>Filipendula ulmaria</i>
Meadow vetchling	<i>Lathyrus pratensis</i>
Meadow thistle	<i>Cirsium dissectum</i>
Red clover	<i>Trifolium pratense</i>
Ribwort plantain	<i>Plantago lanceolata</i>
Tormentil	<i>Potentilla erecta</i>
Ditches	
Frogbit	<i>Hydrocharis morsus-ranae</i>
Greater duckweed	<i>Spirodela polyrhiza</i>
Ivy-leaved duckweed	<i>Lemna trisulca</i>
Lesser water-parsnip	<i>Berula erecta</i>
Pond weed – curled pondweed	<i>Potamogeton crispus</i>
Pondweed	<i>Potamogeton berchtoldii</i>
Purple-loosestrife	<i>Lythrum salicaria</i>
Rigid hornwort	<i>Ceratophyllum demersum</i>
Rootless duckweed	<i>Wolffia arrhiza</i>
Water dock	<i>Rumex hydrolapathum</i>
Water forget-me-not	<i>Myosotis scorpioides</i>
Water starwort	<i>Callitriche species</i>
Yellow-flag iris	<i>Iris pseudacorus</i>

Photographs of selected wildflowers found on your holding during pre-Higher Level Stewardship surveys in 2012 (19 photos sent)



Common knapweed– purple summer flowers



Carnation sedge – spring flowers with blueish grass-like leaves

In terms of impact 49% reported that the advice received from SWT/FWAG had an impact on their understanding of nature conservation features on the farm. The type of impacts reported range from awareness raising and improving understanding through to an ability to identify particular species and an improved understanding of conservation management:

- Educated on the identification of certain weeds.
- Wild flowers and orchids on one particular field. Surveyed land and said what fields were more important. Flowers and different varieties. Ditches high in invertebrates – said which ditches were more important.
- Different birds.
- One field SSSI. It was explained that it was not for land but for ditch and wildlife on that particular piece. Previously no knowledge as to whether specific plant, aquatic wildlife etc.
- Understand what they (SWT/FWAG) want.
- Think about why doing it and greater consequences of what trying to do. Not greatly interested in what trying to achieve. Different types of species and suitable habitat for existence.
- Beetles – only knowing of existence. Don't know of any special birds.
- Made more aware. Already aware as that type of farmer but e.g. sward height at end of season to benefit birds.

- Understanding what birds nest on the levels. What it's all for. What HLS does. Snipe in particular.
- Better understanding of vermin control – crows and carrions to give ground nesting birds a chance.
- Made more aware of how we can help and enhance nature and understanding of what trying to achieve. Ditch management - more aware of whether doing good.
- Know got rare plants (but could not identify them).
- Changes in wildlife. Did not take that much care before. Take more interest in that now than when more intensive.
- Identification of flora species, vegetation. Trees. Hedging.
- Did not realise had so many plants and flowers. She (SWT) impressed me.
- Just how it all works and how they would like it to work.

There is also evidence from the survey that advice from SWT/FWAG has had an impact on conservation management of farmland in general as well as the specific impacts identified associated with HLS, although trying to separate out what farmers are doing that is distinct from their HLS options is difficult. 40% of respondents reported that the advice they had received has had an impact on conservation land management in general. Ditch management and the frequency of ditch management were commonly mentioned in terms of the impact of advice.

Comments provided included:

- Won't be supplementary feeding as much as before. Don't winter outside so often on land rented. Cut down on numbers so can manage. Not so much hay and silage. Worked out headage. SWT suggested reduce numbers a bit.
- Have reduced the amount of ditching to every 2-3 years to help wildlife. Beforehand every 1-2 years. Drainage Board - gets done very year. Couple of ditches that need doing out annually otherwise get so much weed in that no water in. Other ground done to every 2-3 years. More hassle with Drainage Board setting levels - they do ditching on the internal drainage board rhynes. Control all weirs and on some moors attempting to raise the water level. In HLS agreement that clear drain out in one of the fields - main cross gutter. Water penned up so high that ran back in. Drainage Board trying to sort out penning level and put in new weirs.
- ESA changed it initially. HLS stopped us changing practices established under ESA.
- Know what supposed to do. Good relationship. Fine tune things. How many rushes, how often to do ditches, know way banks supposed to be done - sloping rather than straight as being cleaned out Not in agreement as such.
- Do understand it a bit more. Very wet land but got to do (one's) best when weather's right.

- Way maintain banks and ditches and timing of maintenance. Makes us think a little bit. Cut mostly sloping on banks. Doing ditches in-between September and December. Doing less frequently - 1 in 4 years. Previously every 1-2 years.
- Less intensive than previously. Don't use artificial fertiliser now. Intended to be less intensive anyway. FWAG helped me along the way.
- Doing ditching now every 2/3 years. Used to do every year. Drainage Board put in new culverts this year so did not have to do it this year. Get advice from Drainage Board or contractors - they knows what's what. (Expectation that will do ditches less frequently in future)
- Useful and practical ideas - how to maintain hedges and cutting around hedgerows.
- Fertiliser usage - what allowed to and what not allowed to. Less compound fertiliser - use more FYM (Farm Yard Manure). Ditching - how often allowed to do it - routine do every three years. Used to do less often. Poaching and use of ring feeders.
- Dates to work by for mowing and other things.

Participants in the survey were also asked about *View from the Brue*, the magazine published by SWT as part of the Brue Valley Living Landscapes Project (see Figure 3). 70% reported having read *View from the Brue*. Of these 27 farmers stated that they found the publication 'interesting' and 21 said that it was 'useful'. There was no significant difference between landowners advised by either organisation as to whether they had read the magazine.

Figure 3 View from the Brue



A number could not remember specific useful articles but cited general comments including 'to know what's happening in the local area', 'what other people are doing with the HLS scheme' and 'to give a few ideas.' One respondent commented that it was 'informative' rather than 'useful'.

More detailed comments were:

- To see what's in the future and what way people want to go. Is there a return on the job?

- Information about farm tracks and run-off. Publicity about a meeting with contractors. Where ditches pulled up banks are up high and ground low. Contractors trialling machine to spread soil out. Demonstration is next month.
- Rushes and things like that.
- Interesting reading about wildlife – wading birds and environment they like. Rush control using constant topping.
- One of things very useful – grants available through the Brue Valley – Catchment Sensitive Farming grant.
- Group and seminar meetings. General background knowledge. Interesting in general.
- Interested in wildlife anyway. Like to see what trying to achieve.
- Information about local contractors.
- Ways of doing gutters - useful. Pictures of how it works. When explain capital works.

Finally, farmers were asked how they thought SWT/FWAG advisory services could be improved. This revealed some of the tensions between agriculture and nature conservation organisations that were characteristic of this area in the past. Although some farmers were very pleased with the service they received, many were of the opinion that SWT was insufficiently knowledgeable about agriculture, that they wanted water levels “too high” and that changes in management were resulting in fields becoming overgrown which was perceived to be impacting negatively on bird populations. Part of this seemed to be based on a critique of an organisation that employs staff not seen as ‘local’ and a more general criticism that SWT does not “know the land”. The following are some examples of the more critical comments made by farmers:

- If rushes overgrown no birds.
- Not a commercial advisory service so don't have financial considerations.
- Someone who knows the land. Would get some sensible answers. Have kept water in north drain higher this year - been too high. (SWT) - not local people. Don't know the land. Need to work on it for several years.
- Good if more farming orientated so could understand link between farming and conservation.

These negative comments have to be balanced against those who were very pleased with the service provided by SWT/FWAG:

- To be honest with the adviser we had there would not be much more they could do to improve. Very thorough.
- Can improve but don't know whether can under financial constraints. Could get across point more if had more finance. Happy with what advice has been provided.
- SWT very helpful. Helped us to get agreement. Very good how they did it.

- Find SWT [a] go-ahead organisation and very realistic. Easy to deal with. Somerset body - national politics does not get in the way unlike other NGOs (non-Government organisations).
- FWAG - good thing there. Can fall back on them for information. Nice to know bodies of people that can get information from.

4 Conclusions

Although based on a relatively small sample this research has nevertheless demonstrated a number of ways in which the advisory services provided by SWT and FWAG in the Brue Valley have had an impact.

The advisory service operated by SWT and FWAG in the Brue Valley has played an important role in assisting farmers with their HLS applications, particularly on SSSI land. Not only did farmers report that working with SWT/FWAG made the HLS application process easier than expected but the advice service also helped them understand the purpose of HLS and the associated management requirements. On the other hand some farmers perceive HLS as being much the same as the ESA, particularly tier 2, and may not be fully aware of the subtle differences in emphasis between the two schemes. SWT may have a future role in this regard.

In the absence of a counter-factual situation (where the advice scheme did not exist) it is difficult to say precisely how many fewer applications would have been made to HLS without the advice service, although a number of farmers stated that they would not have applied without the support of SWT/FWAG. The Brue Valley advice scheme has been important in helping farmers secure replacement agri-environmental agreements in the face of the conclusion of Somerset Levels and Moors ESA agreements. ESA payments had become so important for many farmers that often they would have felt that they had 'no choice' but to apply for HLS.

The advice service operating in the Brue Valley has also had a broader, more general impact on conservation land management with a large proportion of participants in the survey pointing to improved awareness of issues and management requirements and for some, an improved ability to identify valuable species. A number of landowners/farmers in the area also had a very positive attitude towards SWT and FWAG.

The news is not all good however. The prolonged period of flooding in the area has brought with it serious economic and psychological harm, affecting recall of advisory visits but also creating a situation where all environmental organisations were potentially seen as contributing to the problems. Several farmers were critical of aspects of conservation management (such as tree removal) and felt that the actions SWT were promoting reflected a lack of understanding of farming in the area. On the other hand, some farmers were now quite happily adopting less frequent ditch management – a practice that some may associate with flooding problems. There was also a perception that SWT failed to take into account the financial implications of agri-environmental management. Although this was only explicitly mentioned by two respondents, helping farmers to understand the financial implications of entering in to an agri-environmental scheme could be one way of SWT combating the criticism that it does not understand farming on the Levels. Some of the other adverse comments were directed at the HLS application process, much of which is beyond the control of SWT/FWAG but it is important to try to minimise frustrations with the application process by keeping appointments, returning calls, etc.

The research has revealed that NE is a frequent source of advice for farmers in the area, with some stating a preference for going straight to NE rather than an intermediary such as SWT or FWAG. It has also been demonstrated that farmers overwhelmingly prefer face-to-face advice. Although this may appear a more expensive means of delivering advice it seems likely that face-to-face advice delivered by someone that the recipient trusts and respects will be more likely to be followed (follow up written advice is also useful in this respect). There was little evidence of the penetration of web based sources of advice. Rather, farmers generally appreciated more traditional forms of

communication such as *View from the Brue*. The summary HLS agreement sheet sent to some of the farmers was also well received and is something that should be continued in future.

In terms of the impact of the move from ESA agreements to HLS this study is in some ways too early. Several farmers have only relatively recently secured a HLS agreement. In addition, the weather of the past two years has meant that many have had to seek a temporary relaxation or derogation on their scheme rules to carry out tasks later or delay them. This has had an impact on both capital works and tasks with definite dates. It would be useful to explore the impact of the transition to HLS over the longer term.

A number of recommendations follow on from this research:

- SWT/FWAG should continue to deliver advice on a face-to-face basis where possible. This is what farmers prefer and is likely to make the advice more effective. As two landowners remarked – “came out and explained everything. Would not have been able to understand. Sent leaflets but not the same”; When someone explains not so complicated. Gives you confidence. Can talk over things you've got reservations about. In letter form not so good.”
- Follow-up visits to ensure the landowner is secure in translating the scheme options into environmental management on the land would be helpful and might lead to added value for wildlife if the wider benefits for the environment sought by the wildlife agencies could be discussed. A couple of farmers mentioned that a follow up visit would be good - "really good to have an annual review" "would have been nice to have had contact since", "like to have met and had a walk around and discussed suggestions", "might be other things that could enhance wildlife that are not in the scheme". It would be useful for SWT/FWAG to carry out a ground survey with a small number of farmers to see how they are managing to comply with the stringent management requirements for HLS.
- There is a clear role for SWT/FWAG in translating management requirements to farmers. One useful way of doing this is the provision of summaries of HLS agreements. Photographs to illustrate key species are very helpful.
- Group events for agreement holders would also be useful as these are often good networking events and a chance for landowners to meet contractors who could do jobs. Given the evident sensitivities about contacting landowners following the flooding of early 2014, which occurred after the interviews had taken place, group events may be a useful way of overcoming this.
- The study identified a potential role for SWT and FWAG in working with tenants on designated HLS or ELS land. It may not always be apparent where land is let out but it is important to the success of the schemes that tenants fulfil any obligations assigned to them and that they are aware of the requirements of the scheme. A group event for landowners and tenants might be useful to further this work, followed by one-to-one visits as appropriate. It is important for schemes prescriptions to be met, both from the point of view of farm income and benefits to wildlife.
- SWT/FWAG should continue to assist farmers to identify and access environmental income sources. One landowner suggested quick reference information so flow charts or time lines for different schemes could be useful. In addition, SWT/FWAG should consider advising farmers of the financial implications of agri-environmental scheme participation, perhaps by providing a checklist of items to consider or by providing an average or range of likely costs for different types of work.

- SWT/FWAG should continue to provide a strong advocacy/pressure group role. As one landowner noted "SWT in good position for overall schemes - joined up management on water level management". With their overall knowledge of the Moors and environmental schemes SWT/FWAG should lobby for continued agricultural and conservation related benefits in the area, taking on board comments from landowners.
- SWT/FWAG should continue use of informative newsletters targeted at farmers.

Postscript

This research was conducted after the 2011-12 floods on the Levels and Moors and before the floods of 2013-2014. Although exploring the impact of the floods was not an explicit objective of the research, the influence of the floods both on the ability of landowners to comply with their Stewardship agreements and on attitudes towards conservation management/environmental organisations was soon apparent. The recent floods have clearly made things much worse; a situation compounded by the scapegoating of environmental organisations by some individuals. SWT, SW FWAG and other organisations will need to work closely with farmers in order to rebuild relationships and develop appropriate land management practices. All of our recommendations above still stand but it is important to recognise that it may take longer to achieve some conservation outputs on the ground. SWT and FWAG could play a useful role in assisting farmers who will have problems delivering their HLS agreement due to the impact of the floods.

Appendices

Appendix 1

2010 HLS Guidance Template CEC Moors

£130/Ha

Version 3 (13 May 2011)

HK15 - Maintenance of grassland for target features

General Description of the Management Required

This option is aimed at maintaining Floodplain Grazing Marsh on fields which are able to provide:

- a) Ditch habitats for aquatic flora and fauna
- b) Grassland habitat for wet grassland flora

Indicators of Success

- Water levels in ditches must be maintained at or above the penning level, provided by the Internal Drainage Board/Environment Agency, with at least 30cm (12") of water in the bottom of the ditch at all times.
- Aquatic plants (submerged, floating and emergent) in wet ditches should cover between 25% and 75% of water area. This should include at least 2 of the following plant species: Frogbit, Arrowhead, Ivy Leaved Duckweed, Water Plantain, Hornwort, Starwort, Common Reed, Reedmace (see *Desirable Ditch Plant Species* Leaflet in Appendices). Cover of Filamentous Algae should be less than 5%. Cover of Duckweed should be less than 75%.
- Wet ditches should consist of a mix of early, mid and late succession ditches: 10-25% early (cleaned out that year); 35-75% mid, 10-25 % late (i.e., more than 70% cover of emergent plant species).
- No more than 10% of any ditch should be in heavy shade.
- Throughout the Agreement, the cover of aquatic weeds, such as Floating Pennywort, Parrot's Feather, Australian Swamp Stonecrop or New Zealand Pigmy Weed, should continue to be zero in ditches under your management (see Aquatic Weeds leaflet in Appendices).
- The cover of rushes should be less than 30%. In-field scrub cover should be less than 5%. Scrub cover over the ditches should be less than 5%.
- The extent of the plant species of interest within the grassland as identified in the Farm Environment Plan and during the Natural England visit should be maintained or increased.
- All SSSI land you are managing under this option should be in favourable (or unfavourable recovering) condition.

Management requirements

The following rules apply across the whole area being managed under this option.

Ditches

- Maintain existing ditches. Do not clean out any one field ditch more frequently than 1 year in 3. i.e. clean $\frac{1}{3}$ to $\frac{1}{4}$ of the ditches each year (ideally in autumn) to remove weed. De-silting, a maximum of 1 year in 10, should remove silt only and not cut into the bank profile unless you have agreed otherwise with your Natural England adviser.
- Do not work on field ditches between 1 April and 31 August (*Note! This does not apply to main ditches currently maintained by the Internal Drainage Board*).
- Graze/cut field ditch edges. Do not cut more frequently than once every year. All cuttings that could damage the sward must be removed. The use of permanent fencing is not permitted. Temporary electric fencing is allowed, provided that field ditch edges are grazed/cut at some point during the year.

Grassland Management

- Manage the sward to achieve the indicators (above) by grazing between May and November or hay cutting after 1st July with aftermath grazing, to achieve a sward height of between 5cm and 15cm in November. Earlier and/or later grazing is permissible if weather conditions allow and poaching can be avoided. Flail/top any ungrazed vegetation after 1st July.
- Do not top, roll or harrow between 1 October and 30 June. Do not treat more than 50% of the total grassland area in any one year and leave a minimum of 25% tussocks / longer grass.
- Field operations and stocking must not damage the soil structure or cause heavy poaching. Care must be taken to avoid damage by vehicles. Small areas of bare ground on up to 5% of the field are acceptable. Take particular care when the land is waterlogged.
- Supplementary feeding is allowed, provided feeding sites are moved regularly to minimize damage to soils and vegetation.
- Well-rotted farmyard manure may be applied at a maximum rate of 7 tonnes/ha/yr, but not within 10m of a watercourse. There must be no other application of nutrients such as fertilisers, other organic manures or waste materials (including sewage sludge). Do not apply manure between 1 April and 30 June.
- Ploughing, sub-surface cultivation and modifications to the existing drainage system are not permitted. This includes subsoiling and mole ploughing. Routine maintenance of field gutters is permitted and encouraged.
- Control undesirable species such as Creeping Thistle, Spear Thistle, Curled Dock, Broad-leaved Dock, Common Ragwort and Common Nettle by selective topping, weed wiping or spot treatment so that their cover is less than 5% of the area. Agree all methods of control with your Adviser.
- Control Soft Rush, as follows:
 - Fields less than 5 % cover Soft Rush should be grazed and topped / flailed every other year, cutting as low to the ground as possible for best control.
 - Fields with 5-10% should be grazed and topped / flailed each year.

- Fields with up to 20% cover should be cut and baled then grazed or grazed and topped / flailed every year. You should consider weed wiping.
- Fields with over 20% cover should be cut and baled or grazed and then flailed each year followed up by a programme of weed wiping, for example a third annually.

You should remember regular topping will further weaken the plants and that aftermath grazing is a requirement of the Scheme.

Weed wiping is a useful and potentially very effective technique for control of all types of rush. Repeat application may be required, especially in areas of dense infestation.

You can weed wipe without the need for a derogation, providing weed wiping is not undertaken prior to 1 July.

At wiping, rushes should be actively growing so as to enhance uptake and translocation of herbicide within the plant. Application to young vigorously growing stems in mid summer is most effective. For dense clumps it is advisable to cut the vegetation 4-6 weeks prior to wiping so as to ensure that the majority of the vegetation will be susceptible to the herbicide application. In order to avoid damaging the sward you **must** ensure that there is a minimum height differential of at least 20cm (8") between wiping height and the sward.

To further weaken the plants and encourage the sward to develop over any dead clumps/toppings, flailing should be carried out approximately 4-6 weeks post wiping.

Remove all livestock 7 days prior to wiping and do not re-introduce any grazing livestock for at least 7 days after wiping has been completed. This should provide adequate time for the herbicide to translocate within the plants.

Maintain or install new field gutters if required to help control in-field surface water, and hence control the re-establishment of soft rush in the sward.

Please consult a BASIS qualified agronomist for guidance on the correct herbicide.

- Do not tip or dump any external material on the fields.

Appendix 2

2010 HLS Guidance Template

CEC Moors (For non-RWLA land)

£255/Ha

Version 3 (13 May 2011)

HK10 – Maintenance of wet grassland for wintering waders and wildfowl

General Description of the Management Required

This option is aimed at maintaining Floodplain Grazing Marsh on fields which are able to provide:

- c) Wet grassland conditions, which can be used by wintering waders & wildfowl.
- d) Ditch habitats for aquatic flora and fauna
- e) Grassland habitat for wet grassland flora

Indicators of Success

- Wintering waders (e.g. Lapwing, Snipe, Golden Plover) and Wildfowl (e.g. Teal, Wigeon, Shoveler) should be present between 1 December and the end of February for a period of several weeks, or regularly at the same time each year.
- Between 5% and 75% of the field should have standing water (winter splash) between 1 December and the end of February, in so far as weather conditions permit.
- The cover of tussocks of grass or sedge (year-round), should be between 25% and 60% and cover of rushes should be less than 30%
- In-field scrub cover should be zero. Scrub cover over the ditches should be less than 5%.
- Once the Water Level Management Plan for the SSSI is implemented wet ditches must have at least 30cm (12") depth of water in the bottom of the ditch at all times and must not be more than 45cm (18") below mean field level from 1 March to 30 November, for at least ⅓ of all ditches in each field.
- Aquatic plants (submerged, floating and emergent) in wet ditches should cover between 25% and 75% of water area. This should include at least 2 of the following plant species: Frogbit, Arrowhead, Ivy Leaved Duckweed, Water Plantain, Hornwort, Starwort, Common Reed, Reedmace (see *Desirable Ditch Plant Species* Leaflet in Appendices). Cover of Filamentous Algae should be less than 5%. Cover of Duckweed should be less than 75%.
- Wet ditches should consist of a mix of early, mid and late succession ditches: 10-25% early (cleaned out that year); 35-75% mid, 10-25 % late (i.e., more than 70% cover of emergent plant species).
- No more than 10% of any ditch should be in heavy shade.

- Throughout the Agreement, the cover of aquatic weeds, such as Floating Pennywort, Parrot's Feather, Australian Swamp Stonecrop or New Zealand Pigmy Weed, should continue to be zero in ditches under your management (see Aquatic Weeds leaflet in Appendices).
- The extent of the plant species of interest within the grassland as identified in the Farm Environment Plan and during the Natural England visit should be maintained or increased.
- All SSSI land you are managing under this option should be in favourable (or unfavourable recovering) condition.

Management requirements

The following rules apply across the whole area being managed under this option.

Ditches & Gutters

- Maintain existing ditches. Do not clean out any one field ditch more frequently than 1 year in 3. i.e. clean $\frac{1}{3}$ to $\frac{1}{4}$ of the ditches each year (ideally in autumn) to remove weed. De-silting, a maximum of 1 year in 10, should remove silt only and not cut into the bank profile unless you have agreed otherwise with your Natural England adviser.
- Maintain existing field gutters and their junctions with ditches. Where agreed in your Capital Works Plan, restore previous field gutters. Aim for management of $\frac{1}{3}$ to $\frac{1}{4}$ of all the gutters annually.
- Do not work on field ditches between 1 April and 31 August (*Note! This does not apply to main ditches currently maintained by the Internal Drainage Board*).
- Graze/cut field ditch edges. Do not cut more frequently than once every year. All cuttings that could damage the sward, or the ditch, must be removed. The use of permanent or electric fencing is not permitted.

Grassland Management

- Manage the sward to achieve the indicators (above) by grazing between May and November or hay cutting after 1st July with aftermath grazing, to achieve a sward height of between 5cm and 15cm in November. Flail/top any ungrazed vegetation after 1st July.
- Do not top, roll or harrow between 1 October and 30 June. Do not treat more than 50% of the total grassland area in any one year and leave a minimum of 25% tussocks / longer grass.
- Field operations and stocking must not damage the soil structure or cause heavy poaching. Small areas of bare ground on up to 5% of the field are acceptable. Take particular care when the land is waterlogged.
- Supplementary feeding is confined to the spreading of home produced hay by hand and the use of mineral blocks if required. Feeders and troughs must not be used. Feeding sites should be moved regularly to minimize damage to soils and vegetation and must never be placed on historic features. Care must be taken to avoid damage by vehicles.
- When cutting hay or topping vegetation, ensure field edge/ ditch edge is also cut at this time to prevent leaving a rank strip. Do not allow cut material to fall into the ditch. The field edge/ditch edge can then be aftermath grazed, enabling cattle to drink and birds to feed at the water's edge.

- Do not allow birds to be disturbed between 1 December and the end of February by non-essential activities, such as dog-walking (except on public rights of way), bird-watching, angling, wildfowling, photography, access by vehicle or on horseback, unless you have agreed a strategy with your Adviser.
- Well-rotted farmyard manure may be applied at a maximum rate of 7 tonnes/ha/yr, but not within 10m of a watercourse. There must be no other application of nutrients such as fertilisers, other organic manures or waste materials (including sewage sludge). Do not apply manure between 1 March and 30 June.
- Ploughing, sub-surface cultivation and modifications to the existing drainage system are not permitted. This includes subsoiling and mole ploughing. Routine maintenance of field gutters is permitted and encouraged.
- Control undesirable species such as Creeping Thistle, Spear Thistle, Curled Dock, Broad-leaved Dock, Common Ragwort and Common Nettle by selective topping, weed wiping or spot treatment so that their cover is less than 5% of the area.
- Control Soft Rush, as follows:
 - Fields less than 5% cover Soft Rush should be grazed and topped / flailed every other year, cutting as low to the ground as possible for best control.
 - Fields with 5-10% should be grazed and topped / flailed each year.
 - Fields with up to 20% cover should be cut and baled then grazed or grazed and topped / flailed every year. You should consider weed wiping.
 - Fields with over 20% cover should be cut and baled or grazed and then flailed each year followed up by a programme of weed wiping, for example a third annually.

You should remember regular topping will further weaken the plants and that aftermath grazing is a requirement of the Scheme.

Weed wiping is a useful and potentially very effective technique for control of all types of rush. Repeat application may be required, especially in areas of dense infestation.

You can weed wipe without the need for a derogation, providing weed wiping is not undertaken prior to 1 July.

At wiping, rushes should be actively growing so as to enhance uptake and translocation of herbicide within the plant. Application to young vigorously growing stems in mid summer is most effective. For dense clumps it is advisable to cut the vegetation 4-6 weeks prior to wiping so as to ensure that the majority of the vegetation will be susceptible to the herbicide application. In order to avoid damaging the sward you **must** ensure that there is a minimum height differential of at least 20cm (8") between wiping height and the sward.

To further weaken the plants and encourage the sward to develop over any dead clumps/toppings, flailing should be carried out approximately 4-6 weeks post wiping.

Remove all livestock 7 days prior to wiping and do not re-introduce any grazing livestock for at least 7 days after wiping has been completed. This should provide adequate time for the herbicide to translocate within the plants.

Maintain or install new field gutters to control in-field surface water, and hence control the re-establishment of soft rush in the sward.

Please consult a BASIS qualified agronomist for guidance on the correct herbicide.

- Do not tip or dump any external material on the fields.



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