Title of report:	**BFWN Final Test & Trial Report**
T&T number:	**174a**
T&T name:	**Breckland Farmers Wildlife Network**
Author (organisation):	**Breckland Farmers Wildlife Network**
Author (individual):	**Cathy Mumford & Dr James Gilroy**
Date submitted:	**31st January 2023**
Version:	**1**
This report is submitted to Defra as part of the Environment Land Management schemes Test and Trial programme.	

Contents

1.0 Summary

Breckland Farmers Wildlife Network is a farmer led group of land managers in the Breckland NCA[1], recently expanded during DEFRA Test and Trial 174[2] . The output was the development of a network of cultivated margins (CS option AB11) shown by the evidence base in the Breckland Biodiversity Audit (BBA) to be a key farm conservation intervention with the potential to benefit most of the rare, scarce and threatened species in the Brecks[3]. Test 174a began with a baseline survey in December 2021 and continued with five day workshops primarily on payments and incentivisation, landscape management plans, long-term agreements, monitoring and outcomes, and advice and guidance. Workshops were attended by 17 - 47 farmers, with the best attendance following the lifting of Covid 19 restrictions.

174a included a project carried out by Dr James Gilroy (UEA) with the network to demonstrate how biodiversity audit data could be used to develop a simple system for consistent monitoring, in this case for the cultivated margins in the Brecks. Incorporated into the workshops were presentations by James and collection of feedback from farmers. Expert botanical advice was received from Johanna Jones and Tim Pankhurst (Plantlife). The protocol is intended for use by farmers and other non-experts for consistent long term, large scale monitoring and is reported separately in **"Designing a biodiversity monitoring protocol for the cultivated margin network" (174a BFWN Monitoring Test report UEA Jan 2023)**.

This relates to the policy question: **"How to monitor the delivery of projects and associated environmental outcomes to ensure compliance?"** also addressed at workshop 5.

Baseline survey:

Completed by 45 members, this showed that 50% of holdings were in arable/field vegetable production, with a mix of farming types in the remainder. 71% of holdings were larger than 500ha with 40% over 1000ha. This is high compared to the average of 121ha in the East of England[4]. 78% of holdings have irrigation and 74% are landowners. 33% of farmers were in the modal 45 - 54 year old age group. 93% were male and 7% female. All respondents had previously participated in AES with most now in CS Mid-Tier or HLS and only 13% were not in a scheme at the time of the survey. There was strong support for implementation of the network of cultivated margins with 87% supporting the inclusion in a Landscape Plan, and this thread ran through all the workshops.

Workshop 1 - Payments:

a) What is the best approach to setting payments for Landscape Recovery?

Local pricing was seen a good approach to setting payments with income foregone as a starting point. In an area of high value vegetable cropping, outdoor pigs and annual cropping licences, incentivising conservation measures financially is challenging . Information collated by Brown & Co from 17 farmer members assessed the level of income foregone needed to incentivise farmers to complete the network of margins. The average gross margin of £1430/ha did not reflect the large range from £471/ha to £2274/ha. The findings show that high value root vegetable cropping represents the highest weighted gross margin with the average weighted gross margin across the sample of £2,368.74/ha compared to farms in the sample with only combinable crops and sugar beet showing a weighted average gross margin of £803.83/ha. The lowest value of £471/ha represented a non-irrigated cereal only farm. The net margin was not calculated as cultivated field margins were not seen to affect fixed costs significantly and due to the complicated nature of completion. This exercise

did not attempt to add the costs of optimal management of cultivated margins which require more careful attention than just annual cultivation. The total area of linkage and core margins developed in Test 174 was 537ha so landscape scale cost at the average gross margin figure of £1430/ha would be £767,910. The current value of AB11 in CS is £550/ha which does not provide a good incentive for many farming businesses in The Brecks.

b) <u>How to incentivise land manager participation and collaboration in Landscape Recovery projects and determine appropriate payment mechanisms.</u>

Multiple barriers were identified and common themes to address these were:

- The need to value AB11 ecologically and economically in the Brecks to measure public goods.
- Good knowledge transfer about AB11 management to avoid problems and poor perception and maximise biodiversity benefits.
- Local priorities should be identified, used in guidance, and disseminated well.
- Flexibility is needed to encourage participation and collaboration to enable the network of margins to be completed across the whole landscape.
- Support from a locally knowledgeable expert

c) <u>How do we determine appropriate payment mechanisms (blended finance)?</u>

Lack of knowledge about blended finance was unanimous among participants. Concerns were voiced about the present uncertainty, volatility of markets, the very new marketplace for private finance, agreement length and concerns about the risk of double funding. An established market with reliable systems linking farmers to the market is needed along with clear measurement of public goods to give land managers confidence in the sale of biodiversity net gain or carbon credits. Greater understanding would be needed for a group of farmers to discuss further and answer policy questions.

<u>Workshop 2 – Landscape Plan:</u>

<u>What could a landscape plan for a farmer group look like?</u>

Based on the six public goods in the DEFRA 25 Year Environment Plan many features were identified which could usefully inform a Landscape Management Plan in the Brecks. Each farms Farm Environmental Record and stewardship maps were agreed as a simple starting point. An app was suggested for individual farms, with each farm's ambitions recorded and feeding into an NCA wide plan.

Assistance would be needed to collate information and develop simple to use tools to do this, and train land managers in use of technology. All participants were happy to share data within the group and anonymised data outside the group. This would be useful to show the group's actions and achievements externally. Someone would be needed to manage the plan. The existing structure of the group (now a Company Limited by Guarantee), with members represented by a Steering Group, could be used to make decisions in consultation with members. Scientific evidence and specialist advice from experts would be needed to inform the plan.

It was agreed that payments should only be withheld until problems are resolved in some situations, for example, if a member deliberately did not achieve conservation objectives. Otherwise a supportive approach with external advice would ensure that a land management plan was carried out.

Workshop 3 – Long term Agreements:

a) **How to construct long-term agreements (30+ years), potentially incorporating conservation covenants, to safeguard investments in land use change and associated environmental outcomes?**

95% reported that LTAs would only be acceptable with 10-year, or more frequent, break or review clauses (19 out of the 20 attendees and email respondents). Longer term agreements than this are seen as a disincentive to participation in Landscape Recovery, and insistence on this is predicted to have a negative impact. In the Brecks many farms have had back to back separate environmental agreements for 30 years so long term conservation has been possible without rigid long term agreements. Flexibility is essential to allow a high level of participation. The unknown financial support at the end of an LTA, possible land designation, removal from production, uncertainties around taxation and reduction in land value were key concerns.

Distribution of funds through a single entity was seen as a barrier with direct payments from public or private funds preferred.

b) **How to construct agreements for different land ownership e.g., individual and group agreements, tenants, MOD, and commons?**

The increased difficulty of agreement between multiple parties could be an additional disincentive for uptake of LTAs among farmers. A long-term vision between all parties will be needed for success and clear definition of all possible risks. The definition of activities on land and the possible change in land values were among the important considerations and sound legal advice was regarded as essential.

Workshop 4: Monitoring and outcomes

a) **How to monitor the delivery of projects and associated environmental outcomes to ensure compliance?**

The current CS self-reporting of areas was agreed as a sensible system and self-certification with photo evidence supported. Building good relationships with agencies, a flexible pragmatic approach and using data to inform improvements were all seen as important. An inspection early in agreements was suggested as key to ensuring everything was in place correctly and to make any adjustments early on. Penalties should only be applied where there is blatant disregard for the agreement and if all actions have been taken correctly, but outcomes not achieved, farmers should not be penalised.

The work of Dr James Gilroy formed a large part of this workshop (see attached 174a BFWN Monitoring Test report UEA Jan 2023).

How to align Landscape Recovery projects (as distinct from Local Nature Recovery projects) to wider Defra initiatives such as Net Gain and Nature for Climate projects which may also deliver land use change?

Key feedbacks were that more guidance is needed on stacking payments (soon to come from DEFRA). The ability to put part of RLR land parcels into different schemes will be needed to allow

full participation in LNR, LR and other DEFRA initiatives. Extensive requirement for farmers to self-monitor would be time consuming and funding for this will be needed as part of schemes.

Workshop 5 – Advice and Guidance:

Financial incentives were seen as the most likely way to engage farmers with schemes, including central funding for advice and guidance. Funding for NE to provide good advice which is readily accessible through a trusted personal contact would be the greatest incentive, especially with complex schemes. The network, like other farmer clusters, provides an existing structure which could deliver support for schemes, including one to many events to disseminate information.

Consistency in scheme advice and a reliable knowledgeable trusted source of advice were seen as most important. The RPA were seen by many as a barrier between farmers and Natural England who can provide excellent support. Contact regarding CS agreements is currently with the RPA and participants experienced difficulties in getting sound conservation advice, with widely available guidance often referenced as advice. Examples were cited of long waits for answers to more difficult questions on conservation management and cases where adequate answers were not forthcoming. Ideally farmers would like a known NE contact who can advise on all schemes and visit one or two years after starting an agreement to check that all is proceeding as expected and make any improvements. Full funding of this support and having a trusted adviser is very important to farmers.

Financial incentives are the key to engagement with new and complex sources of income, it was perceived that this would drive participation.

2.0 Acronyms and definitions

Acronym	Meaning
ALB	Arms-length body
AW	Anglian Water
BBA	Breckland Biodiversity Audit
BFWN	Breckland Farmers Wildlife Network
BNG	Biodiversity Net Gain
CS	Countryside Stewardship
EA	Environment Agency
EIA	Environmental Impact Assessment
ELMs	Environmental Land Management scheme(s)
HLS	Higher Level Scheme
LTA	Long Term Agreement
NCA	National Character Area
NE	Natural England
NRT	Norfolk Rivers Trust
RPA	Rural Payments Agency
UEA	University of East Anglia

3.0 Introduction

Test & Trial 174a is taking place in the Breckland NCA with BFWN, a group of 58 farmers and land managers with a farmer leader and facilitator. Collaboration evolved in Test & Trial 174 through the inspiration of a University of East Anglia post-doctoral researcher (Dr Rob Hawkes) with wide experience of the region. The enthusiasm and personal contact from farmer leaders in four geographical regions (mini clusters) also contributed to the rapid expansion of the group during 2020-21. Cultivated margins provide disturbed land which was identified in the BBA as a suitable habitat for most of the 629 rare, scarce or threatened dry open habitat species in the region. Dr Hawkes developed an analytical tool to produce a map of cultivated margins in core locations on each participating farm and a network throughout Breckland in optimal locations linking dry open priority habitats. This is shown clearly in a Google Project[5]. The baseline survey carried out for 174a showed near universal support among BFWN members for this work to be implemented and widespread enthusiasm for the unique natural Breckland environment. For BFWN members Landscape Recovery in Breckland begins with connectivity via this network of AB11 so the challenge is in enabling the entire land management community to complete it through adequate incentives.

Breckland NCA covers large areas of dry sandy soil of glacial origin in Norfolk and Suffolk and is dominated by large scale arable and vegetable production, the latter mainly for supermarkets and food processors, with a smaller proportion of mixed, livestock and arable farms. Irrigation has allowed highly productive cultivation of high input vegetables and outdoor pig production. Land is rented via annual cropping licences for this purpose from farms throughout the area.

The Test & Trial began with a written baseline survey with 45 responses from member businesses during December 2021 and January 2022. 6 completed it as a mini cluster, 30 alone and submitted by email, and 9 with support from a cluster leader. Most questions involved making choices from options (to encourage completion), with two free text questions. The survey was a starting point ahead of the five workshops responding to policy questions, and intended to collect:

1. Land holding information – land type, land use, tenure, priority habitat, designations
2. Previous engagement with agri environment
3. Current level of knowledge about Environmental Land Management
4. Thoughts and ideas about the future management of their holdings
5. Their incentive for participating in the Test
6. Attitudes towards long-term agreements for Landscape Recovery
7. What outcomes they would like to see
8. Participant insights into the policy themes

The policy questions to be answered at the workshops were as follows:

Workshop 1 - Payments:

a) What is the best approach to setting payments for Landscape Recovery?
b) How do we determine appropriate payment mechanisms?
c) How to incentivise land manager participation and collaboration in Landscape Recovery projects and determine appropriate payment mechanisms.

On 28th February 2021 47 farmer members of BFWN from 37 different businesses met with Agri-Business Consultant and Partner at Brown & Co., Rob Hughes. He reported on the gross margin data received from farmers (and analysed along with Alida Tysterman, Brown & Co) followed by a Q and

A session. The complete data and summary are appended to this report. Presentations from Dr Rob Hawkes on the previous Test & Trial 174 (The Joy of Cultivated Margins), and from Nick Sibbett from The Landscape Partnership Ltd on blended finance, and specifically Biodiversity Net Gain, helped to set the context for the meeting. Members then split into five small groups each guided by a mini-cluster leader or member of the BFWN Steering Group. These were split to give a mix of business type and size. Discussions followed around the policy questions in Landscape Recovery in a Breckland context and notes taken within each group by a BFWN member.

Workshop 2 – Landscape Plan: What could a landscape plan for a farmer group look like?

On 13th April 2021 21 farmer members participated in a workshop with presentations from:

- Teresa Dent CBE, CEO of the Game and Wildlife Conservation Trust presenting on her wide experience with farmer clusters and landscape plans with particular reference to trading of nutrient mitigation in water
- Professor Brian Reid, soil science expert from the University of East Anglia
- Becks Mundy, Senior Adviser at Natural England on Shared Nitrogen Action Plans

Discussions in two groups answered structured questions on a landscape management plan for BFWN with findings recorded on flipcharts. Each group was led and noted by a pair of mini-cluster leaders. Public goods from the DEFRA 25 Year Environment Plan were used to outline what could be included in a plan for the Brecks, and an attempt made to answer other questions regarding a plan.

Workshop 3 – Long term agreements :

a) **How to construct long-term agreements (30+) years, potentially incorporating conservation covenants, to safeguard investments in land use change and associated environmental outcomes?**
b) **How to construct agreements for different land ownership e.g., individual and group agreements, tenants, MOD, and commons?**
c) **How to monitor the delivery of projects and associated environmental outcomes to ensure compliance?**

On 7th June 17 farmer members joined in a group discussion based around a presentation from Claire Robinson (National Farmers Union Senior Countryside Adviser). Following low attendance questions were sent to all members and 3 responses received by email; these are included in this report. Most of their suggestions were aligned with attendee opinion, but where these differed or specific ideas were put forward it is noted that they arose from the email responses. The context for possible ELMs Landscape Recovery in the Brecks was set by Dr Rob Hawkes introducing a key aspect of the BFWN pilot application under the species recovery theme. Dr James Gilroy introduced the concept of the simple monitoring protocol as part of the question on monitoring and a field visit to a nearby cultivated margin helped participants to give feedback on the feasibility of this part of the project.

Workshop 4: Monitoring and outcomes:

a) **How to monitor the delivery of projects and associated environmental outcomes to ensure compliance?**
b) **How to align Landscape Recovery projects (as distinct from Local Nature Recovery projects) to wider Defra initiatives such as Net Gain and Nature for Climate projects which may also deliver land use change?**

On 13th October 2021 22 farmer members participated in discussions based around past experiences of environmental schemes; all participants had past and/or present experiences. 14 attendees

completed a written questionnaire on monitoring. Dr James Gilroy gave an update on the monitoring scheme for cultivated margins and received farmer feedback.

BFWN were pleased to welcome Stephen Boxall (DEFRA Test & Trial Officer), Lucy Hatcher (Natural England Brecks Team Lead Adviser), Chaz Butterworth (DEFRA Landscape Recovery policy team) Sam Burford (DEFRA Policy Team Leader for Landscape Recovery) and Ian Trouse (Natural England Liaison Officer for Breckland Farmers Landscape Recovery) who were able to make informed comments on the discussions, especially in the light of BFWN success in the Landscape Recovery pilot application. Chaz Butterworth set the current context of Landscape Recovery before limited discussions on question b) which proved difficult for participants to answer.

Workshop 5 – Advice and guidance:

a) **What would make paying for advice for E.L.M. most worthwhile?**
b) **Where is the greatest need for advice in the application process?**
c) **Can guidance replace the need for advice?**
d) **If we provided any support towards the cost of advice, how would that best be delivered (e.g., grant, loan, voucher)?**

These original questions from the 174a contract were amended in conjunction with the Advice and Guidance policy team to better reflect the feedback needed immediately prior to the workshop. Further details are in the Findings section. On 16th December 2021 28 farmer members participated in a workshop with discussions based around their experiences. 22 completed a simple written questionnaire and 11-13 answered simple questions by placing stickers on a flipchart with yes/no responses on the theme of advice and guidance. Nick Bruschi (DEFRA Advice and Information Policy Lead) gave an introduction on current thinking around advice and later aided discussions along with the facilitator. Local NGO sources of advice and guidance, Sam Hurst, Farm Adviser from Norfolk Rivers Trust (and key partner in BFLR) and Rob Holland, Anglian Water adviser, gave presentations on the theme of water advice.

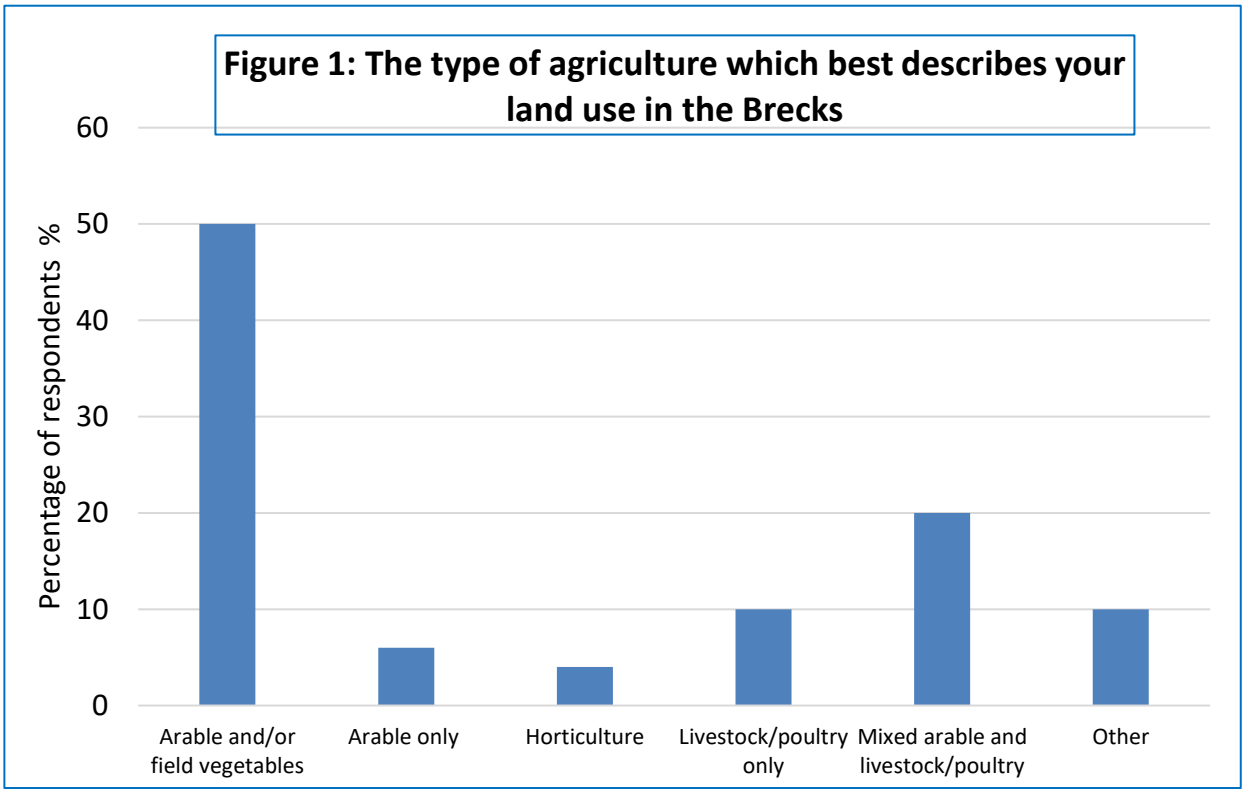
Dr James Gilroy presented the final draft for the biodiversity monitoring protocol (see attached 174a BFWN Monitoring Test report UEA Jan 2023) and Johanna Jones from Plantlife (provider of specialist advice for the Test & Trial), attended to interact with farmers on the proposed scheme.

4.0 Findings

4.1 Baseline Survey information (at December 2021)

a) Land holding information – land type, land use, tenure, priority habitat, designations

50% of respondents reported land use as arable/field vegetables (Figure 1), 40% have land holding larger than 1000ha, 18% 501-1000ha (Figure 2), and 78% of holdings have an irrigation licence. These results reflect the agricultural landscape in the Brecks which is dominated by large scale irrigated vegetable production with a mixture of other farming types. 74% of respondents own the land (Figure 3) .



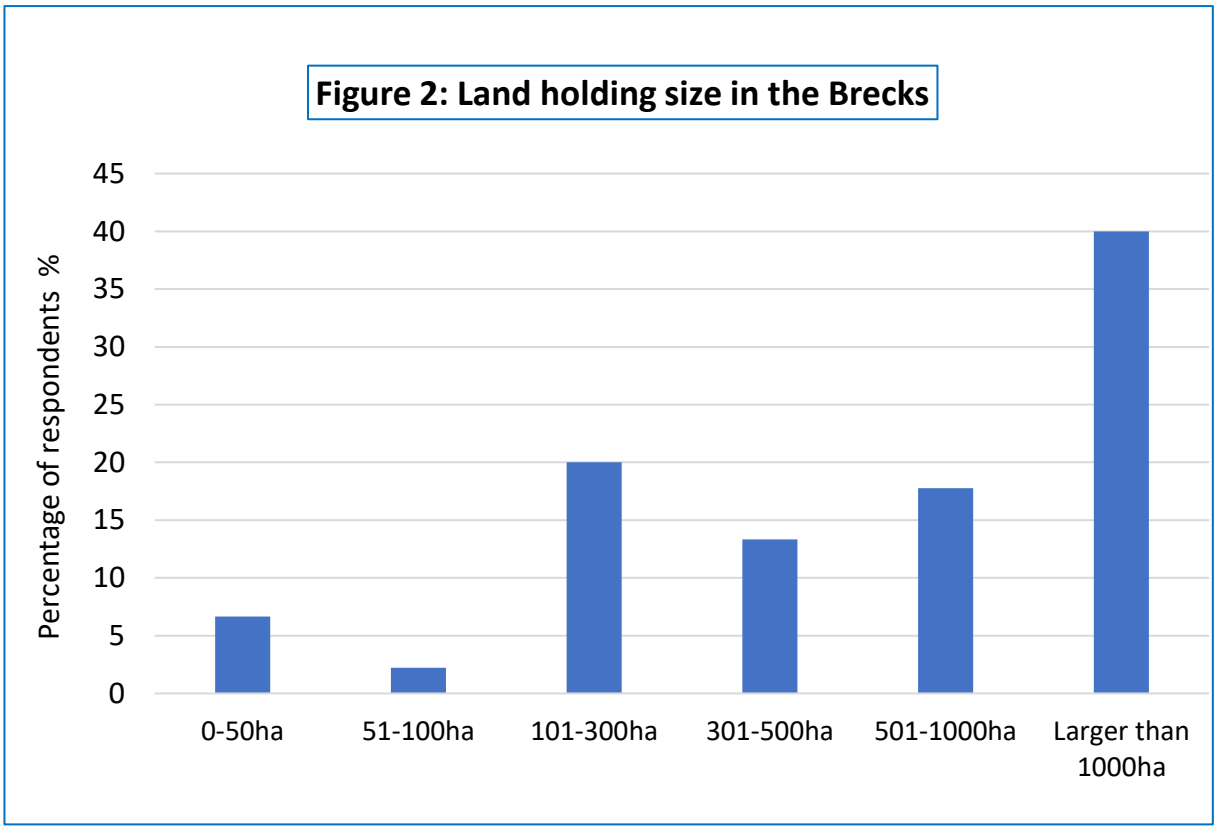


Figure 2: Land holding size in the Brecks
Percentage of respondents %
45
40
35
30
25
20
15
10
5
0
0-50ha
51-100ha
101-300ha
301-500ha
501-1000ha
Larger than 1000ha

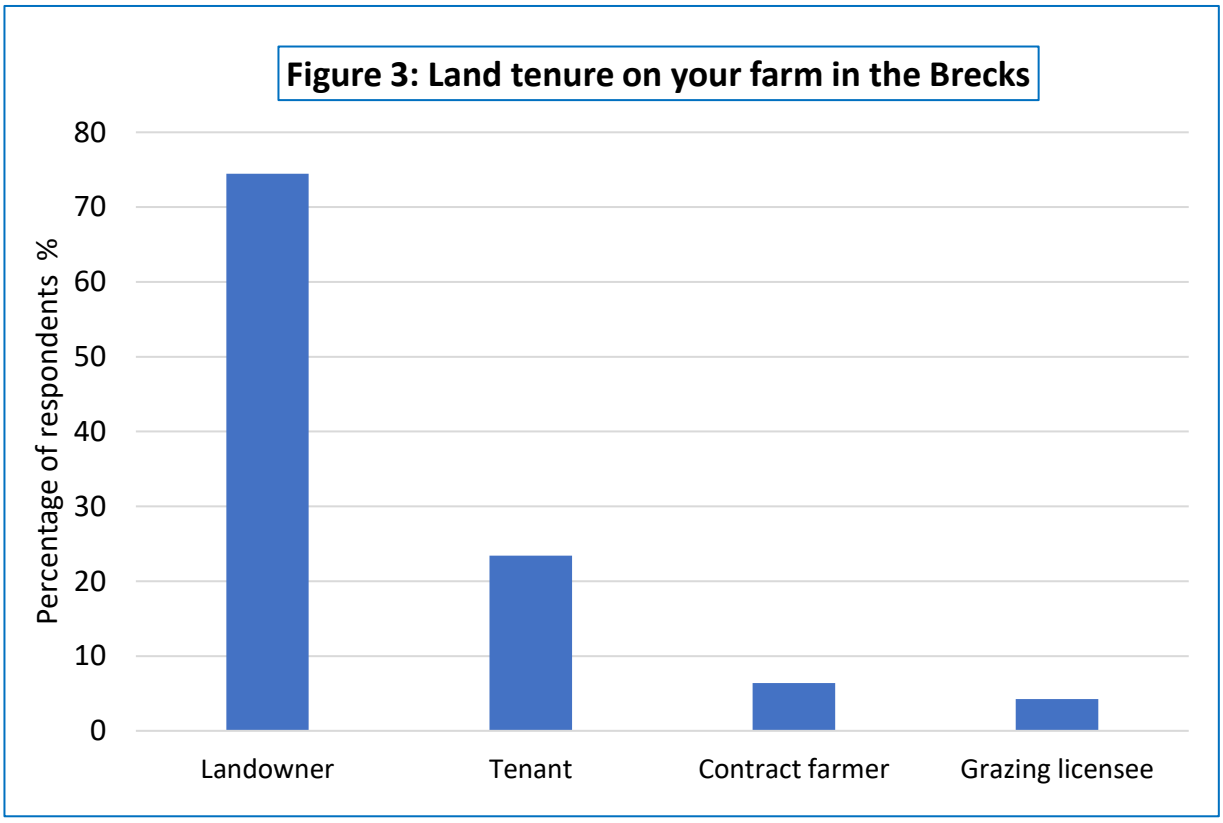
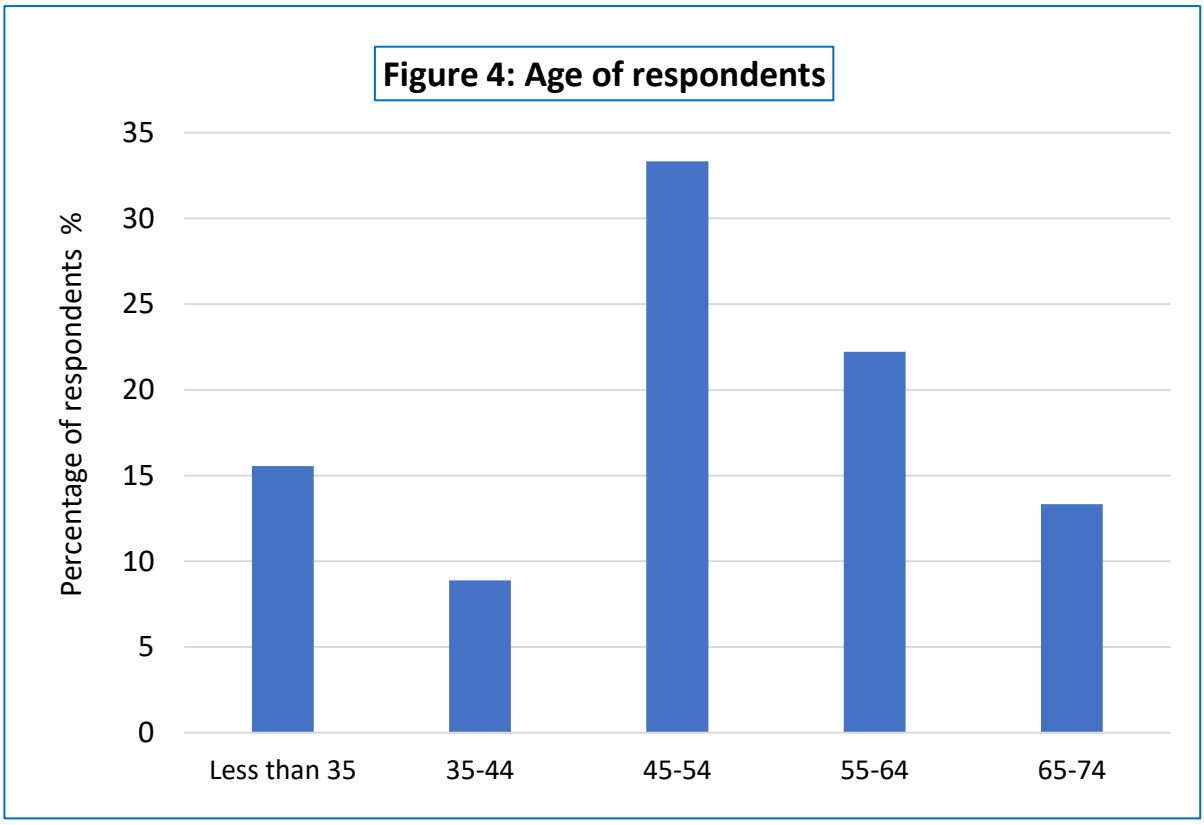
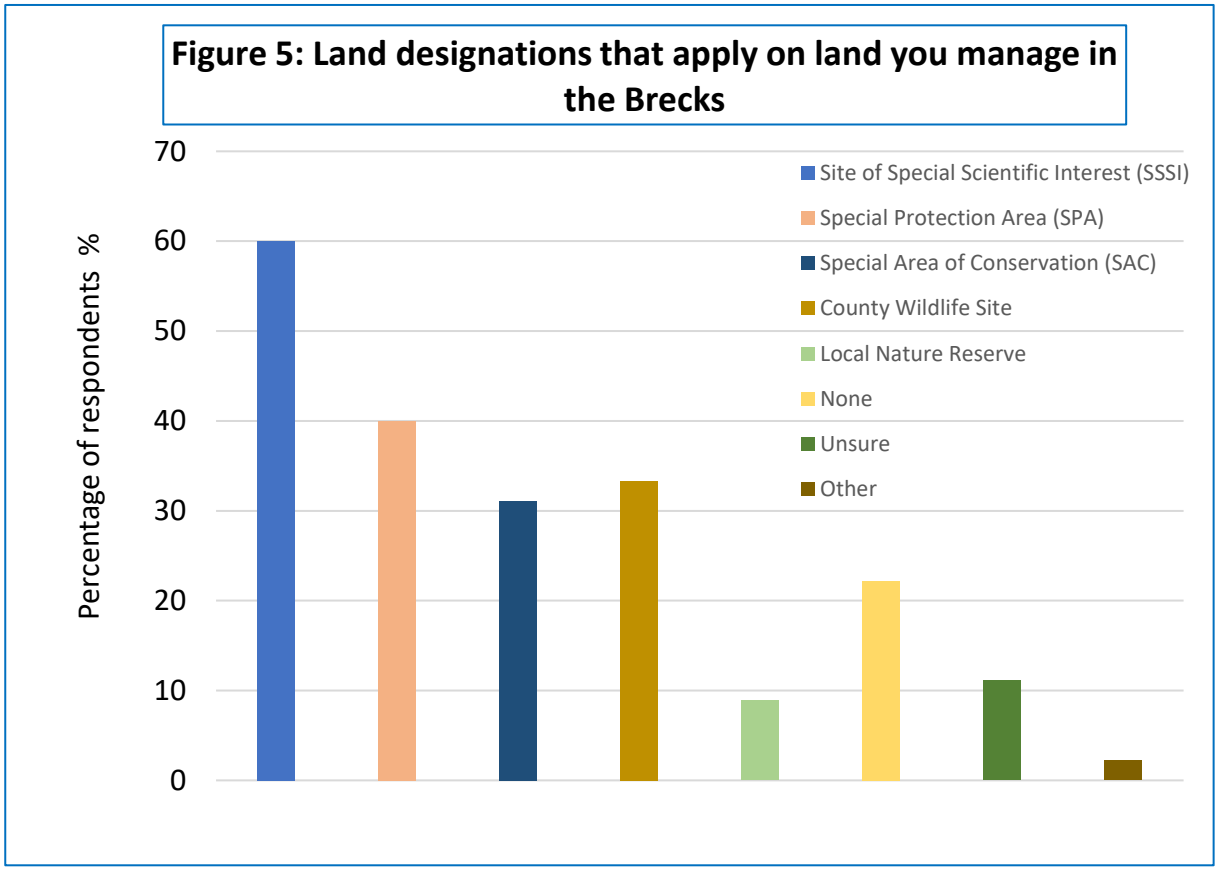


Figure 3: Land tenure on your farm in the Brecks
Percentage of respondents %
80
70
60
50
40
30
20
10
0
Landowner
Tenant
Contract farmer
Grazing licensee



The average age of UK farmers in 2005-6 was 53 years[6] and the modal group in BFWN respondents was 45-54 years (Figure 4). 93% of respondents were male and 7% female.



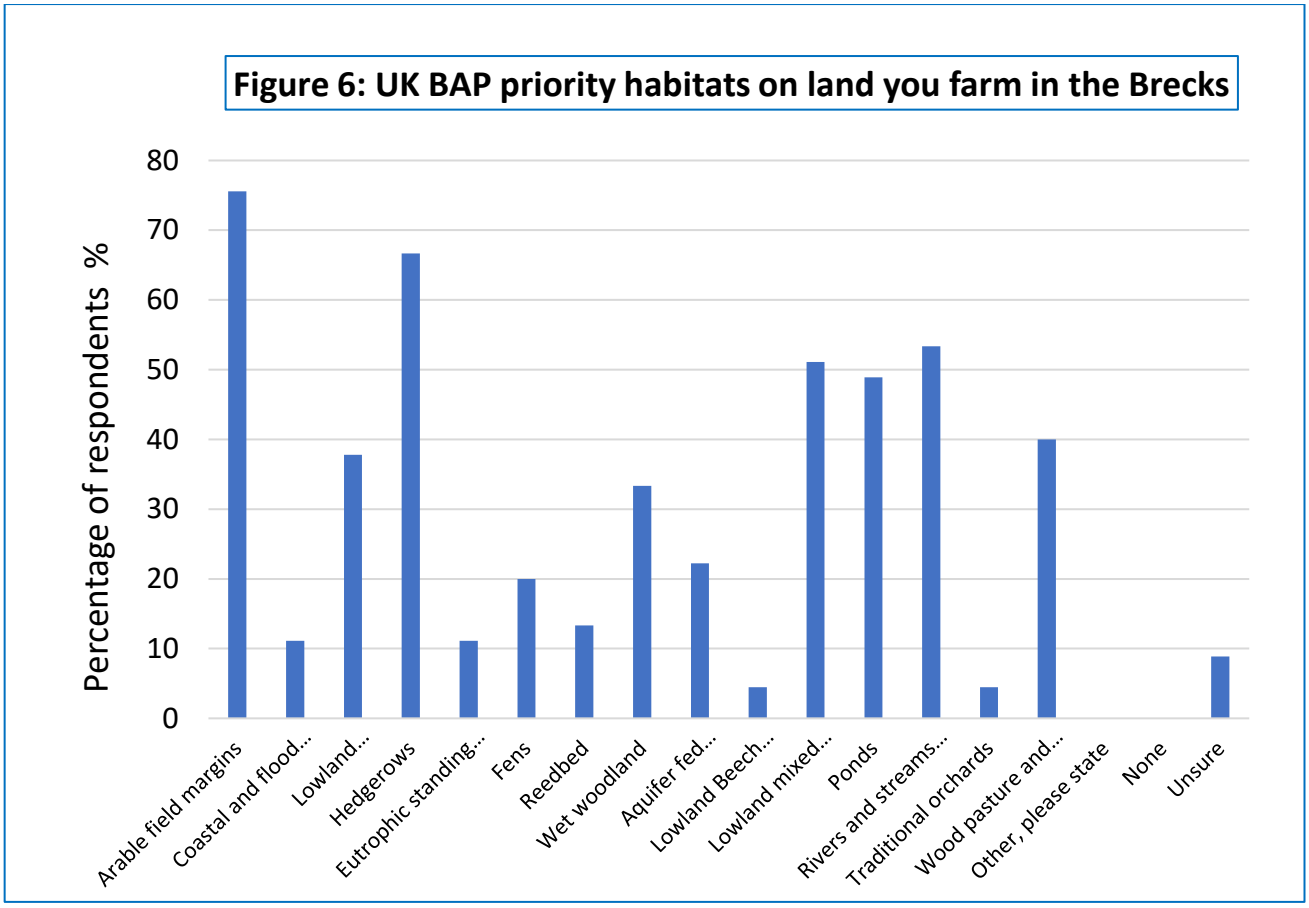


Figure 5 shows that 60% of respondents reported an SSSI on the land they managed, 40% with a Special Protection Area, 33% with County Wildlife Sites and 31% with a Special Area of Conservation. Figure 6 shows the most common BAP priority habitats reported were arable field margins (76%), hedgerows (67%), rivers and streams (53%), lowland mixed deciduous woodland (51%) and ponds (49%). There was some confusion over BAP priority habitats which may have resulted in misreporting and four respondents were unsure.

b) Previous engagement with agri environment schemes

All respondents stated they had previously been in AES (Figure 7 shows the range of schemes). At the time of the survey 13% were not in a scheme. Anecdotal evidence from within the group cites current uncertainty, inappropriate SFI standards for field vegetable production and insufficient reward as the reasons for non-participation. 49% of respondents reported current participation in CS Mid-tier and 31% in HLS including two awaiting confirmation. 73% of respondents reported having some cultivated margins on their farm.

Figure 7: Previous participation in agri-environment schemes in the Brecks

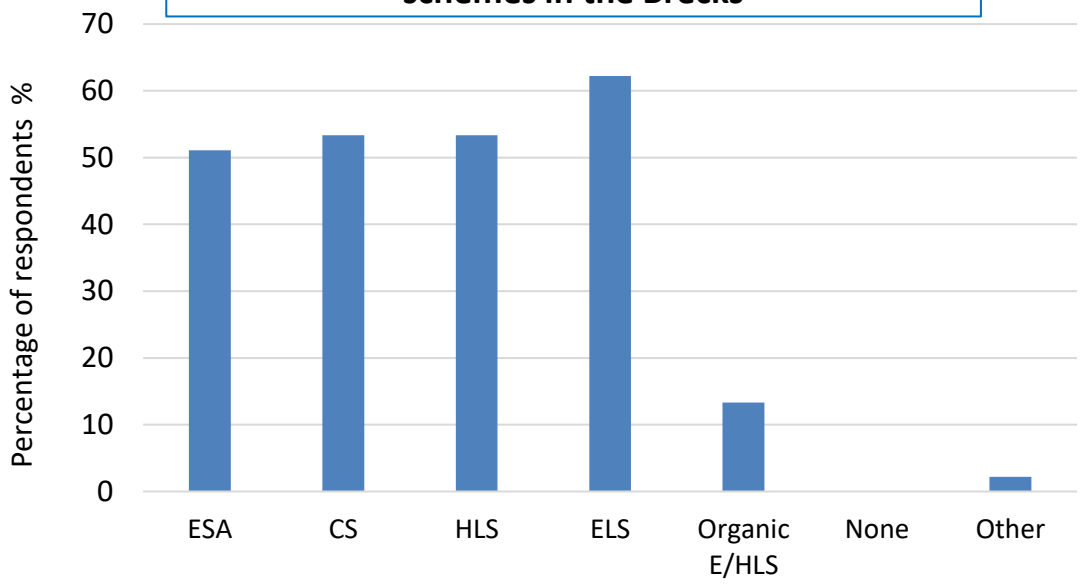
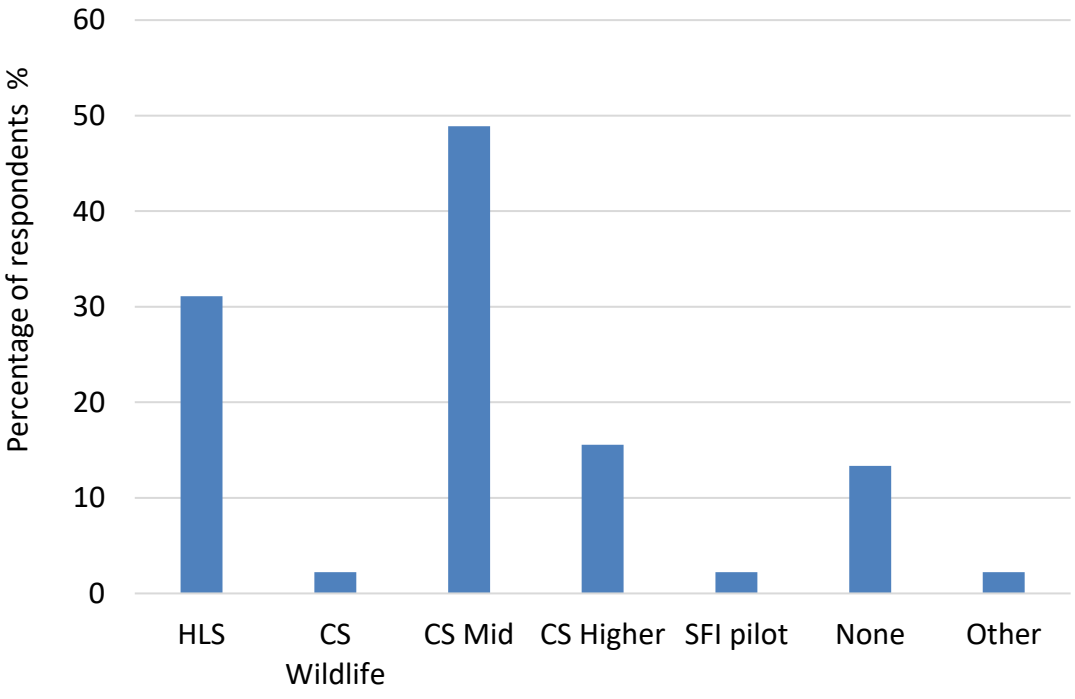


Figure 8: Current participation in agri-environment schemes in the Brecks



c) Current level of knowledge about Environmental Land Management schemes

56% of respondents reported knowing little about ELMs and 40% reported being reasonably well informed. The remainder reported knowing all they need to know or being well-informed.

d) Thoughts and ideas about the future management of holdings

This was captured in a free text question asking respondents to share thoughts and aspirations around the future management of the land managed. Ten participants did not respond to this question. 71% mentioned the environment or biodiversity in their response and 37% of responses were on the theme of integrating agriculture and biodiversity. 34% had specific environmental goals for their farm e.g., funding for flood alleviation and habitat for wading birds, ambitions for a no-till arable system, no fungicides/insecticides use on farm, a reduction in synthetic nitrogen use by 50%, restoration of grass habitats along the River Wissey, improve pingo site, improve organic matter, continue to improve habitat for specific bird species. 14% highlighted food production, 14% mentioned the network of cultivated margins with the need for payment to reflect the true cost of removing land from production cited. Sustainability, a fair price for food, long term, consumer confidence, a reduction in bureaucracy and climate goals were all mentioned in individual responses.

e) Incentives for participating in this Test

Participants were asked what encouraged them to take part in this DEFRA Test. The most popular reasons, from 91% of respondents, were reported as a desire to find out more about future policy and ELMs, and to see environmental improvement in the Brecks. Many others were popular choices; a desire for opinions to be considered in future DEFRA policy, the importance of environmental concerns, and concern about the loss of BPS income and business viability. Payment for participation did not appear to be a key incentive to take part as only 20% of respondents reported being influenced by this.

Table 1:

What has encouraged you to take part in this DEFRA Test?	%
I am interested in environmental improvement across the Brecks	91
I want to find out more about future policy and ELM schemes	91
Environmental concerns are important on my farm	80
I want my opinions to be considered in future DEFRA policy	80
I am concerned about the loss of BPS income and the viability of my business	78
I would like to take part in future environmental schemes	76
I have been encouraged to do so by BFWN	73
I would like to collaborate more with other land managers	69
I would like to discuss issues with other farmers	60
I enjoy getting together as a group	44
I will be paid £125 per full day workshop	20
My neighbours are involved, and I don't want to miss out	16

Participants were also asked what they would like to get out of being a member of BFWN as this may have engaged farmers in joining the Test. The reasons reported for belonging to the network showed enthusiasm for the Brecks and improvement in biodiversity. Responses on the most common themes are shown in Table 2.

Table 2:

What you would like to get from being a member of BFWN	%
Environmental benefit/biodiversity/conservation	74
Working as a group/cooperation/collaboration	44
Linkage/linked/network/landscape scale	33
Knowledge sharing and access/advice	33
Income/payment/viability	23
Strength in a group/one voice	21

Comments included the possibility of having direct information from DEFRA and the desire for DEFRA to understand that optimal environmental management in the Brecks NCA must compete with high value agricultural rents and incomes, in particular for AB11, the option for cultivated margins, and that the Test could just be a start to achieve these outcomes.

f) What outcomes they would like to see

Table 3 shows that 93% of respondents would like to see improved prospects for biodiversity in the Brecks as an outcome from the Test. A high proportion wanted to learn more about ELMs and have a landscape management plan for the Brecks; 84% and 82% respectively, with reservations expressed that a plan can be an outcome at this stage. 73% of respondents hoped to learn more about future income for their business and 71% that collaboration in the Brecks improves.

Table 3:

What outcomes would you like to see from this Test?	%
Improved prospects for biodiversity in the Brecks	93
I will have learnt more about future ELM schemes	84
We will have a landscape management plan for the Brecks	82
I have learnt more about possible future income for my farm business	73
Collaboration among land managers in the Brecks has improved	71
We will have provided realistic information about payments to DEFRA	64
We will have come up with some ideas on monitoring and outcomes	60
We have had the opportunity to talk through many of the problems and uncertainty ahead as a group	58
We will have fully explored the potential for long term agreements	51
I will have made some good contacts	40

4.2 Workshop 1 - Payments:

a) What is the best approach to setting payments for Landscape Recovery?

Brown & Co Report Summary and Analysis (Appendix 1 and Annex 1)

The report showed that among the sample of 17 BFWN members the average weighted gross margin was £1429.95 with a range from £471.11/ha to £2274/ha. In the Q and A following presentation of the interim results there was a consensus that financial incentives were most important to land managers and businesses, while acknowledging that priorities and motivation can be very different for individuals. One group agreed that the current AB11 rate of £544 is an adequate incentive for non-irrigated land, and the other three groups believed the average gross margin figure of £1430 would incentivise higher participation. The total area of AB11 identified in Test 174 is 537ha so the total cost at the average gross margin figure would be £767,910 if all margins were put in place. To facilitate completion of the entire network of AB11 it is the hardest to reach land managers which need to be incentivised. A commonly held view at the workshop was that drive or compulsion from customers may be the only way to incentivise some vegetable producers to put in place conservation measures. Many participants commented that a payment of the "local price" for annual land rental for vegetable and outdoor, would be needed. At the time of writing annual rents range from £800 - £1400/ha depending on the land and situation.

Income forgone plus costs was used to calculate the recently revised CS rate for AB11 of £544/ha which was increased from £532/ha (in January 2023 increased to £550/ha). A Freedom of Information request was submitted to find out what cropping systems were used to calculate the new rate and the response in Appendix 2 does not suggest any high value cropping was used in the income foregone calculation. It was acknowledged at the meeting that crops perform less well on field margins than the field average, but that annual cropping licences include the whole field area.

Participants agreed that the average weighted gross margin of £1429.95 would be an incentive for farming businesses in the locality to implement cultivated margins and the best approach to setting payments, encouraging the most resistant farms. There was speculation as to how this could be achieved as green finance is not an obvious candidate for the sale of carbon credits (AB11 is cultivated annually) and does not fit into the current NE BNG metric, despite a very strong evidence base for biodiversity benefits in the Brecks[2] [3]

b) How to incentivise land manager participation and collaboration in Landscape Recovery projects and determine appropriate payment mechanisms.

There are barriers which need to be resolved in addition to adequate financial reward. Solutions were suggested for some of these:

Barrier 1: Perception of field margins as untidy:

- Valuable Breckland biodiversity and species benefits need to be better communicated to farmers
- Better coordination and information on local priorities for options from DEFRA/NE
- Supportive advice sharing and inspiration needed with more farm visits
- Support of an independent adviser/conservation agronomist

- Payment by results was suggested but only supported by approximately 10% of attendees, mainly due to concerns about external factors affecting outcomes
- Strong support for a good monitoring system to spread this knowledge to other farmers. Important for all to learn from mistakes and disseminate farmers experience to dispel myths and educate
- Need to value ecologically and economically to measure ecosystem services impact
- More research needed on benefits of beneficial insects in margins
- Having an individual responsible for cultivation and appropriate management was suggested by one group

Barrier 2: Problems with weeds and effects in vegetable cropping

Encroachment of weeds e.g., wild chrysanthemum and couch, and insect pest species into vegetable crops can be detrimental (see Appendix 3 for examples)

- Knowledge exchange from best practice within the group to allow optimal management for a diverse mix of species.
- Dissemination of local NE guidance at farm events.
- Natural England recommendations for local good management allowed without derogation (timing of spraying next to vulnerable high value vegetable crops is difficult).

Barrier 3: Long term agreements (20 + years)

- A sliding scale was suggested with farmers signing up for long term agreements paid more
- Inflation proofing/index linking of payments needed to incentivise
- Sliding scale of flexibility and payment, more rigid agreements paid more

Barrier 4: Margins are all very different, so a flat rate seems unfair

Good management (outlined in Natural England local guidance) is essential to achieve high quality outcomes.

- This appeared to support payment by results, but this was seen as too complicated by most unless a simple system could be devised (this is part of Test 174a with Dr James Gilroy)
- A bonus could be paid if certain species were found

Barrier 5: Concerns around flexibility of management and fear of penalties

- There may be good agricultural reasons that individual margins cannot be put in place e.g., irrigation access, so permanent alternative routes would be helpful so that connectivity is not compromised or allowance of irrigation in some years. Long term siting of margins is most beneficial and there is more potential benefit from this than detriment from disturbance by irrigation pipes.
- Cultivation of permanent pasture is not permitted but research shows that disturbance is needed in the Brecks. Flexibility and local prioritisation of cultivated land and disturbance are needed.
- More guidance and reasonable attitude to mistakes is needed towards building a good, supported relationship with DEFRA, farms need the ability to demonstrate what good is being done.
- Fear of being “locked into” a scheme, what if additions/improvements through learning are needed over time? Review periods, flexible agreements with advice from a knowledgeable adviser would all help. Concerns about Natural England, conservation agronomist suggested.

- Contractors and annual cropping licence holders do not respect conservation agreements. Understanding from NE/RPA in years of annual cropping licences could enable completion of the AB11 network and bring long-term benefit.

Barrier 6: High commodity prices

- Linkage to input/output prices

Additional barriers which require central action and collective resolution:

- At present, as ELMs is evolving, participants felt uncertain about entering into schemes. Some cited the lack of information, resistance to change, lack of confidence, confusion and the complicated nature of schemes as deterrents.
- Participants felt that tenants could feel excluded from long term agreements (4 out of 16 were tenants)
- The threat of losing control of land in the longer term
- Complication where land managers are already in other schemes
- Too much complexity in applications, risk of missing some actions if agreements are too complex. Negative expectation of DEFRA technology. Online form filling. Land managers (especially some older ones) can be deterred by the administration involved.
- Attitude of the public accessing margins; walkers and dogs disturbing wildlife

How could collaboration best be supported?

Collaboration Bonus

In the first Test and Trial 174 and in the baseline survey a collaboration bonus was a very popular suggestion to incentivise the network of margins (see the foot of this section). How could this work?

A threshold bonus was a popular suggestion with a certain level of participation triggering a bonus but unclear where this could be fairly set. The dependence on others for success was not popular. One group suggested that the collaboration bonus could be in the form of good free on farm advice from someone experienced in the Brecks. Many participants favoured a “Breckland premium”, an enhanced payment for AB11 which reflected high gross margins in the area and the local importance of cultivated margins to the unique biodiversity in the area.

Landscape management plan

There was agreement from all groups that funding for a landscape management plan would encourage collaboration and this was backed up by the popularity of the science led network developed in Test and Trial 174. A funded delivery plan was less popular although it was acknowledged by one group that it could follow on from a Land Management Plan, but only recommending possible actions with individuals choosing whether to take part.

Frequent payments to promote participation

These could only encourage participation if administered well and via a reliable system. The reliability and predictability of payments was seen as much more important than the frequency.

Funding for support

Funding for a conservation agronomist or independent advisory person, open days and knowledge sharing and support to move existing agreements simply into new schemes were all suggested as supporting collaboration. There was a consensus that funding for facilitation services could support

collaboration. Sharing equipment to spread the seed bank from farm to farm was suggested to promote collaboration and improve biodiversity.

c) How do we determine appropriate payment mechanisms? With a focus on blended finance.

This discussion session followed a presentation on biodiversity net gain from an experienced environmental consultant. There was a unanimous reported lack of knowledge about blended finance among participants. There is too much uncertainty, confusion, and insufficient information and guidance for land managers at present and this made it difficult for groups to discuss the issues with confidence. Volatility of markets, the very recently established marketplace for private finance, the long term of agreements, and competition between regions were all seen as discouraging. Many participants were concerned about the risk of being penalised for double funding. The market needs to be established with reliable systems to link farmers to the market and clear measurement of public goods to give land managers confidence in the sale of biodiversity net gain or carbon credits. There were many questions which demonstrated the need for more widespread information and simplicity. There is little confidence that, over long-term agreements, the approach will be consistent as objectives, targets, measuring techniques and technology evolve.

How could blending public and private finance best be achieved?

BFWN does not want to interfere in individual businesses aspirations but needs cooperation between all to achieve the network of cultivated margins and connectivity through the landscape. One group felt that it was difficult to see how private funding could contribute to AB11, and as the key biodiversity intervention it should be publicly funded as the overall cost would be relatively low (see page 5 above). Payment for public goods in water quality was understood as it is already established locally with water companies paying for cover crops or sprayer wash down bays or carbon sequestration in the wet peat in Breckland river valleys. Many participants felt that the inherently low carbon content of Breckland sandy soils, and the fact that AB11 was cultivated made payment for carbon sequestration unlikely. Another group suggested that a trial area on a farm could be used to measure carbon and develop a template. A lack of a standard defined carbon audit method was seen as a disadvantage to farmers in the market for carbon credits. One group put forward connection with local companies to provide a good story for them and for farmers to act as a group to avoid competing in the carbon market. Payment of membership of certification schemes such as LEAF by supermarkets supplied by farmers was suggested as a method of incorporating private finance.

How could Landscape Recovery payment rates incorporate private sector funding?
Many participants said the value of cultivated margins should be measured ecologically and economically**.** All groups suggested that public funds could pay a basic rate to cover the cost for putting in margins. A Breckland premium or payment by results was suggested for private funding. A lack of knowledge made this difficult to answer.

What opportunities can farmers see for securing private funding for nature-based solutions, and what are the barriers to accessing that funding?

There may be opportunities in working with supermarkets supplied to take more responsibility for the environment in the supply chain. Contracts could have built-in environmental requirements (which most already do) in return for supporting farmers by funding provision of advice and payment for

delivering targets. Barriers to accessing private funding exist in resistance from land managers, lack of incentive, the unknown, perceived risk, the long term of agreements, volatile commodities, succession and tax implications, possible inflexibility, complication, and the need for a consistent monitoring system.

What practical arrangements would help projects source and manage private finance, and any associated agreements with private investors?

A local management scheme which offers consistency and fairness is needed to link private funding for carbon credits or biodiversity net gain to land. Local councils do not have the resources and there may be a conflict regarding development requirements, so there may be a role for land agents. A system with one centralised buyer was seen as simple administratively; a body/system is needed to enforce agreements and ensure that commitments entered into are carried out in the long term. The need to measure the value of margins was raised again, a common theme throughout the workshop. There are concerns about the risk of private funders ceasing to trade and addressing this could encourage participation, it was suggested this needs to be underwritten.

How do we assign a value to an environmental outcome, for example, reverse auctions have been used, what other processes could be used? How to achieve a value which is acceptable to a land managers and investors?

Again, limited knowledge made this challenging. Competitive means, such as auctions, between neighbours were seen as undesirable as farmer groups are intended to offer a supportive environment. Reverse auctions were seen to drive down price and habitat improvements and little understood. A large proportion of participants saw measurement as key with a matrix of values suggested and government regulation of the system. A measuring tool which can be easily understood is needed for carbon and biodiversity. An expert ecologist would be needed to assess the base level of biodiversity. Could a farmer group approach large international companies to discuss offsetting carbon across the region?

Are there multiple environmental outcomes which could be achieved in this T & T group? Does this have any implications for there being private sector demand and potential sources of funding?

Most participants could see multiple environmental outcomes in BFWN with improved biodiversity and water quality and carbon sequestration but needed guidance and an evidence base to prove outcomes and develop a funding model. It was suggested that an independent ecologist was needed to benchmark biodiversity and assess improvement.

What should the minimum prices be for environmental outcome payments? How can we establish what the "minimum" is?

The minimum suggested was income foregone and there were widespread concerns about long term agreements keeping pace with inflationary change emphasising the need for some type of index linkage.

Baseline survey responses on payment questions:

In the baseline survey participants were asked questions on possible incentives to work with other farmers on Landscape Recovery in the Brecks, shown in Tables 4 and 5. 93% respondents were in favour of a collaboration bonus, for example, to complete the network of cultivated margins. Financial

support for a landscape management plan (LMP) was chosen by 76% of respondents; there was also support for having an LMP in other questions. Comments included that financial support should compensate for income lost from arable cropping and that payment by results and increased administration or land agent costs in schemes would be a serious deterrent.

Table 4:

What financial incentives would encourage you to work with other farmers towards LR in the Brecks?	%
A bonus for collaboration e.g., completing the network of cultivated margins	93
Financial support for a Landscape Management Plan	76
Financial support paid to the network to deliver landscape scale recovery	69
Funding for shared equipment and resources to manage options (this could include staff to manage and monitor)	64
Adequate recompense for individual interventions in ELMs would encourage collaboration	62
Financial support for group meetings and workshops	58
Financial support for training in monitoring species	58
Financial support for knowledge exchange meetings in management of environmental options	53

Table 5 below shows opinions on various non-financial incentives to work with other farmers towards LR. The prospect of improving the natural environment is clearly the best incentive from those suggested with 89% of respondents agreeing. Having a landscape plan is again a popular choice along with the possible reputational benefits and good publicity for agriculture, both chosen by 71% of respondents.

Table 5:

What non-financial incentives would encourage you to work with other farmers towards LR?	%
The prospect of improving the natural environment	89
Having a landscape plan for the Brecks	71
Good publicity for agriculture, reputational benefits	71
Belonging to the network	67
Feel-good factor of societal benefits	49
Well-being benefits	42

4.3 Workshop 2 – Landscape plan: What could a landscape plan for a farmer group look like?

As shown in the previous section a funded LMP was supported by many members, and baseline survey respondents were also asked what a landscape plan for a farmer group look like:

Table 6:

What could a potential Landscape Plan for a farmer group look like?	%
It should include the network of cultivated margins developed by Rob Hawkes	87
Help and/or advice will be needed to complete it	82
The network should create a Landscape Management Plan for the Brecks	82
The plan should intend to increase natural capital in the Brecks through collaboration	80
Creation of a plan should be paid for as part of ELM schemes	76
The plan should include a baseline assessment of species present on farms	76
Digital and paper versions will be needed	64
The same plan should inform all ELM schemes	60
It should include all features eg water, data records, CS participation, archaeology, community areas	60
The plan should include the natural capital recorded on individual farm eg bird survey data	60
Soil carbon mapping should be part of a landscape plan	53
It should be completed with other stakeholders eg NGOs, local council	42
The same plan should guide privately or blended finance projects	40

The most popular choice among options given for a landscape management plan was reported as the inclusion of the network of cultivated margins developed in Test 174. Comments included “best way to get to landscape scale”, “key species benefit, but other options need to be promoted”, “science led approach will lead to measurable outcomes”, not necessarily all have to be adopted”, “if funded properly”.

With 82% reported as agreeing that help and/or advice will be needed, comments included that it would be needed for consistency between farms, suggested further UEA support, that facilitators will be required to ensure a joined-up approach along with support and advice for individual landowners, and particularly for very small businesses, because of the increasing complexity of farm management.

82% of respondents also agreed that the network should create a Landscape Plan with comments that “the network’s views and opinions should heavily influence the content of the plan”, “Using the science led approach”, “provided it isn't so prescriptive”, “flexibility is the key to success”.”

Comments on the increase in natural capital through collaboration, which was supported by 80% of respondents, included “essential to attract higher level of payment”, “main objective”, “collaboration should be prioritised over individual options where there are clear benefits”, and “should have benefits both financial and environmental”.

76% agreed that creation of a plan should be funded in ELMs with comments in favour (“obviously!”) and more guarded (“not necessarily”), (“depends on level of intervention”).

76% also responded in favour of including a baseline assessment of species on farms with some reservations in the comments; “at least priority species”, “a large task, who pays?”, “one way of measuring improvement”, “a major undertaking”, “most farmers have this already”, “if funded adequately”.

1.Clean and Plentiful Water:

What to map	Comment from workshop discussions
Sewage outfalls on holdings	Monitor water quality over time (maybe using Citizen Science?) not only near outfalls but all water bodies on the farm
Identify and map run-off risks	Remediate eg change gateways, sediment traps
Show cattle risks to water courses	Fencing, buffers
Scope to build reservoirs for water storage to fill in times of flood	Licences could be extended to store water in times of flood
Existing buffers to water courses	To identify gaps
Identify point source pollution	
Extent of cover cropping and regenerative agriculture	Promote alternatives to chemical inputs

2. Thriving plants and wildlife

What to map	Comments from workshop discussions
Cultivated margin network	And additional cultivated margins and areas
Existing features (eg pingos)	Identify for restoration, map their condition and value all features (natural capital and ecosystem services)
Identify potential areas for creation of new features	
Existing reserves and designated areas and potential connectivity	
Timing of groundwork	To ensure protection of ground-nesting birds
Areas where predator control is beneficial eg for ground-nesting birds	Involve gamekeepers in mapping and action

3. Protection from and mitigation of hazards

What to map	Comments from workshop discussions
Areas of flooding risk and river valley management	To mitigate upstream through tree planting and flood plain reconnection
Drought risk and water availability	
Wind and soil erosion	Hedgerow management and gapping up Cover crops Regenerative approach: cover crops, soil health Soil adaptive management
Fire risk to heaths, woodland and crops	Cultivated margins can provide barriers
Loss of pollinators is a risk (but how to map this?)	

4. Beauty, heritage and engagement

What to map	Comments from workshop discussions
Cultivated margins and pollinator mixes	Well-being benefits could deliberately be placed in public view with managed access and information provided. Rotation of pollinator margins QR codes on farms to explain biodiversity and heritage Need to be well managed for best biodiversity and visual benefits
Public footpaths	BFWN trails could be developed Farm walks and controlled access to protect wildlife Make advice available within the network on engaging with the public on access

5. Clean Air

What to map	Comments from workshop discussions
Identify emission sources on the map – a large topic with sharing of ideas and advice needed (The Brecks is a pilot area for Shared Nitrogen Action Plans from Natural England).	Actions for plan to mitigate • Direct from livestock: 1) Reduce stock numbers 2) Extensification of livestock 3) Adjust feed/growth rates, additives in feed and use improvement in breeding 4) Can emissions be captured or reduced? 5) Buffer sensitive heaths against local nitrogen deposition from livestock units with cultivated margins and other features

	6) "Trees to Air" CEH project for shelter belts to mitigate ammonia pollution 7) Use farmyard manure as feedstock for anaerobic digestion 8) Cover anaerobic digester/slurry/farmyard manure stores 9) Slurry injection instead of spreading 10) Could these actions be traded? • Fertiliser (cover crops to reduce use and reduce leaching in winter) Building fertility • Transport (fuel source?); improve energy performance • Improvements in productivity, precision application of inputs • Baseline trade with each other – equalisation formula

6. Mitigation and adaptation to climate change

What to map	Comments from workshop discussions
Need to map potential effects in the Brecks (could local councils inform this?)	
Level of soil carbon	
Potential for energy production, map areas of low productivity (also for biodiversity benefit)	
Overlap with other public goods (water, air, hazards)	Collective responsible sourcing, use of technology

How could a plan show each farms ambitions as well as a group scale plan?

- Start with individual farms Farm Environmental Record map overlaid with the core, linkage, and other existing cultivated margins and CS/HLS plans could be added.
- Central collation and expert help in digital mapping would be needed to produce a Brecks wide plan. An app for individual farms which fed into the group plan would be useful, but there are wide differences in member's technological abilities. Simplicity in use and training could overcome this.
- Identify each farms ambition, which will be very different, then actions should start with those common to most farms to allow knowledge sharing.
- Record results of actions, with some concern expressed about farmer monitoring as there are skills needed which should be valued and paid for.

What information are you happy to share with the group?

All participants would share the plan within the group but not externally. All would share anonymised data outside BFWN, and it was felt that group performance was the best way to share data externally. The GWCT Big Bird Count was given as an example of how collective information could be published.

Past negative experiences have greatly influenced participation in monitoring and sharing of data in the Brecks.

How does the group plan together and decide what it wants to achieve?

- Focusing on the Brecks NCA, more participants could be gathered. Members currently cover over 70% of farmed land in the Brecks NCA.
- Planning and decision making could be made through the existing structure of the group with a Steering Group representing the members and four geographical mini-clusters each with a leader (BFWN is a Company Limited by Guarantee).
- Using evidence-based science to guide planning and actions with advice from experts in different fields. Currently the group has connections with the University of East Anglia, Forestry England, Norfolk Rivers Trust, Plantlife, Buglife, Brecks Fen Edge and Rivers Landscape Partnership, Butterfly Conservation, Natural England, Suffolk Wildlife Trust and Norfolk Wildlife Trust.
- Better understanding is needed so the group would be useful as a source of information and to disseminate guidance for planning. In particular, knowledge about stacking possible sources of funding was requested, and whether this could be part of a plan.

Who is responsible for the plan and how is it monitored?

BFWN was suggested as the body responsible for the plan. There were divided opinions on monitoring but agreement that funding would be needed. Suggestions included:

- Employ someone to coordinate all monitoring and the plan
- Use of advisers
- Engage NGOs for different aspects
- Members and/or volunteers could monitor
- Monitoring should be organised by those who require the monitoring
- Farmers and their employees, advisors, wildlife organisations were all suggested

What happens when a member does not achieve their objective?

There was agreement that:

- Payments should be withheld until problems are resolved
- An outside contractor or body such as Natural England should support and monitor until the required actions are carried out

How can BFWN plan and record these public goods?

- The Breckland Biodiversity Audit should guide the plan
- Combine the plan with stewardship plans
- Public engagement can be recorded by QR code activity
- Some felt monitoring should be done independently or by government bodies (RPA and EA recording water quality) while others thought monitoring student projects should be encouraged. The local agricultural colleges could offer monitoring courses
- An app could be used for farmers to record (alongside mapping)
- Help and advice would be needed for central collation of data

What help is needed?

- Specialist advice to implement the science
- A central resource to collate individual plans into a group form and collate and analyse data
- Help feeding into and using the plan depending on ease of use

4.4 Workshop 3 – Long term agreements:

Table 7 from the baseline survey suggesting some possible barriers to long-term agreements, demonstrates that loss of flexibility of land use is seen as an important reservation about long term agreements with 89% expressing this as a concern. The related issue, whether land use change would be possible at the end of the agreement, was also a major concern with 71% agreeing this could be a barrier. Comments included "can't have this" and the prospect of suppressed land values was raised. An observation was made that the agricultural community currently has a naïve view that long term environment agreements, such as re-wilding, are in competition with food production and security.

Table 7:

Possible barriers to long-term agreements	%
Loss of flexibility of land use	89
Economic uncertainty	78
It might not be possible to change the land use at the end of the agreement	71
Commodity price volatility	64
I might lose control of my land	51
I want my children to be able to have choices about land use in the future	49
Short term tenancies	49
Previous long-term agreements have been financially detrimental	33
I don't know enough about the possibilities to comment	20

In Table 8, showing the possible benefits, 87% supported the suggestion that long term agreements would be long enough to see improvements in habitats and biodiversity and having certainty was seen as a benefit to 73% of respondents.

Table 8:

Possible benefits of long-term agreements	%
Long enough to see improvements in habitats and biodiversity	87
Certainty of income	73
A long-term environmental management plan can be made	69
Index/commodity price linked payments may be possible	60
Long term relationships can be built	51
Ability to have a long-term business plan	51
Financial security	47
I don't know enough about the possibilities to comment	9

a) How to construct long-term agreements (30+ years), potentially incorporating conservation covenants, to safeguard investments in land use change and associated environmental outcomes?

All attendees at the workshop and two email respondents reported that agreements for twenty plus years would be unacceptable, with one email respondent accepting of LTAs. It was agreed by most

that that break clauses every ten years with the option to extend, or shorter-term agreements which can be rolled forward, would be preferable. If benefits are seen and both parties are agreed, extension or continuation of agreements could occur. Five to seven year breaks were suggested by one email respondent along with the possibility of different breaks on different parts of land in an agreement. LTAs and Conservation Covenants could have the unintended consequence of reducing participation in long term schemes and conservation in the Brecks and the scheme become dominated by landowner NGOs rather than farmers. Flexibility would encourage both tenants and landlords to both continue and increase involvement in AES. Many farms in the Brecks have had environmental agreements continually since the 1990s when Environmentally Sensitive Area payments began, using renewed agreements or transfer to new schemes. This shows an intention by land managers in the Brecks to engage with long term conservation when adequately supported and incentivised. Breaks in agreements can also allow conservation improvement as research and local experience changes conservation advice.

Perceived barriers and problems:

- Difficult choices would be needed to find land suitable to take out of production in a productive landscape for both vegetable and arable agriculture.
- Land may be de-valued, and an email respondent mentioned that land values could be increased. Either could have implications for a mortgage or legal charge, and in tenancy agreements Dilapidation or Tenants Improvements must be adequately covered.
- Unknown circumstances at the end of an LTA:
    - EIA may be needed prior to any change of use and may prevent return to production, other prior use, or development
    - Environmental designation may occur eg SSSI, County Wildlife Site.
    - Payments for environmental delivery beyond the agreement may not be available
    - The land may not be eligible for ELM schemes
    - The tax status of land is unknown, and income and capital tax status may change. It is not clear when environmental delivery becomes a non-agricultural activity
- Constructing a suitable legal agreement may be complicated with many clauses to ensure that all eventualities are included
- There are many uncertainties around taxation: how will BNG and carbon credits be considered for tax, how will the holding be considered for capital taxation, and will it be classed as agricultural, and benefit from Agricultural and Business Property Relief? If land is not considered as agricultural, will it be liable to Uniform Business Rates?
- There are many uncertainties around payments; exactly what has been sold (eg BNG, carbon credits), who owns any over-delivery, how payments will be made, whether they will be guaranteed in the future, and what happens to the agreement if the other party ceases to trade. These would all need to be addressed. It is not clear how income from BNG or carbon credits will be regarded for tax purposes.
- Distribution of money to participants via one legal entity was not supported by the group and seen as problematic. Payment of individual penalties was perceived as a potential administrative issue.
- It was seen as completely unacceptable to enter into an LTA which may result in permanent removal of land from farming with no known income beyond the initial agreement.

- Consents may be needed such as planning permission, Natural England assent, Environment Agency permit or Environmental Impact Assessment (for example for afforestation) needed.

How could these barriers be overcome?

- Break clauses; ten years has worked in previous schemes
- Standard template agreements could be developed, for example by the NFU or land agents, which address all concerns, for example in the case of disputes or a company going into administration. Similar agreements may exist in EC co-operatives, for example, and DEFRA could be responsible for investigating these possibilities.
- Commitments from third parties for BNG or carbon credits must have a good covenant and indemnity or insurance may be needed in case of bankruptcy or ceasing trading.
- Agreements which include direct payments from DEFRA, and other parties, to participating land managers, but with funded collective facilitation and auditing of activities were suggested as the preferred means of receiving payment. Individual non-compliance must only result in penalties on the individual, not the group. It is essential to have clarity from HMRC defining when the transition from agricultural use occurs and what the implications are for taxation.
- Proper assessment of the value of land for environmental and agricultural purposes should be made. There is evidence that LTAs could be acceptable for all parties on land where production is clearly not viable.
- A mechanism with set criteria for reversion to agricultural production in some circumstances would encourage participation in LTAs
- Linking payments to an inflationary index would be essential with payment review points. 50% of the payment linked to wheat prices was one suggestion by email.
- Sliding scales of payment relating to length and flexibility of LTAs were suggested, for example, more rigid and longer agreements attract higher payments.
- Flexibility to withdraw at a penalty, or to move interventions where environmental improvements could be made depending on research and experience. An email response suggested that only an individual should be penalised for breaking a contract, not the group as a whole.
- Linkage across the Brecks could be achieved with a combination of Landscape Recovery for those willing to enter into LTAs and Local Nature Recovery for others. A joined-up approach is needed to properly incentivise the network of core and linkage cultivated margins in the Brecks.

How can environmental delivery be assured?

- The responsibility for monitoring needs to be established; land managers may not have the knowledge or resources to do this so external help would be needed or arranged collectively within a group. This cost needs to be realistically identified for the long term. With publicly financed projects it needs to made clear who is responsible for the collation and management of the data.
- A reliable source of advice is needed for management of all types of intervention (whether for DEFRA, BNG, payments for carbon credits or others) and appropriate reaction to monitoring.
- There must be clarity at the outset on management, expected delivery, measurement and monitoring, and action if delivery is not achieved.

- Agreements must include provision for non-delivery or over-delivery and plans for resilience against unplanned significant events like fire.

Conservation Covenants

The group did not see conservation covenants as helpful but a tool which will discourage participation in Landscape Recovery, although one member saw them as a positive tool on small areas. As above 10-year agreements with break/review clauses were favoured with effective monitoring and management. Sufficiently frequent monitoring against clear objectives and good advice would give confidence to potential participants to continue in agreements at review/break points. This would need to be supported by adequate continued payments and added value payments were suggested where unexpected improvements are made over the course of time. Clear recommendations and recording of actions are also important as results are not guaranteed but can depend on external factors as well as management. Bonus payments where expectations are exceeded would be an additional incentive.

How to construct agreements for different land ownership e.g., individual and group agreements, tenants, MOD, and commons?

Approximately 23% of the group were reported as tenants and 74% reported as landlords in the baseline survey. At the workshop 25% of participants were tenants. Possible tax complications, type of tenancy, the landlord/tenant relationship and the type of environmental outcome are all factors to be considered by all parties in LTAs. The added difficulty of agreement between multiple parties was seen as an additional disincentive for members to enter LTAs. It was felt that landlords are unlikely to accept long term conservation covenants on their land as they are seen as too restrictive and could have a significant impact on land values. The uncertainty of that is a deterrent.

- A landowner email respondent suggested that for a landlord/tenant LTA to work well both need to share a long-term vision for their land and businesses and collaborate well towards their aims, and made the following points. Both parties need to fully consider whether ELMs is appropriate, for example, if other development may be available on land in the future. Schemes could reduce or enhance the value of a holding so it would be essential to include terms for possible dilapidation or tenant's improvements. Clarification of the activities allowed within an agreement will be needed as forestry and woodland are not defined as agricultural activities. The reaction of neighbours should be considered and if there is a negative perception all parties must be comfortable in dealing with this. Tenancy agreements must avoid environmental prescriptions which could be considered by DEFRA to make the land ineligible for environmental payments as the tenant is already contractually committed. Landlords may consider recovering possession of the land and entering into schemes themselves. LTAs could attract stamp duty.

Clearly defining the shared risk in agreements and defining what happens if obligations are not met by one party was considered very important. Sound legal advice will be needed for all parties, adding to the cost of LTAs.

4.5 Workshop 4 – Monitoring and outcomes, aligning other DEFRA initiatives:

How to monitor the delivery of projects and associated environmental outcomes to ensure compliance?

Baseline Survey results , December 2022:

Table 9:

Ideas around monitoring, compliance and delivery of environmental benefits	%
Inspections should be aimed at guidance to improve	82
If the advised management is carried out payment should be made regardless of outcomes	80
Monitoring is important to see if environmental features are improving	73
Monitoring should be paid for in ELMs	64
Monitoring must be done to inform future management and research	60
Experts should monitor outcomes of ELMs features	53
Many other things affect environmental success so monitoring may not be fair	53
Outcomes should be assessed	49
Compliance inspections are important	42
Financial penalties should be made for non-compliance	36
Other	13

This was completed by 45 businesses in the network with a section on environmental outcomes. The responses on monitoring and compliance most favoured inspection aimed at guidance to improve (82%) and payment for carrying out advised management regardless of outcomes (80%) However monitoring was still considered important to assess whether management is working by 73% of respondents and 64% believed this should be funded in ELMs. Less popular were financial penalties with 36% of respondents agreeing with that option. Comments received supported penalties only if blatant or repeated inaction was experienced and that supporting advice and guidance had not been followed. It was emphasised that reasonable consideration should be made for other factors affecting environmental outcomes e.g. weather. It was pointed out that the inspirational value of positive outcomes should not be underestimated, especially when supported by expert advice on biodiversity and species.

58% already have estimated or accurate numbers of birds on their farm with a range from 31 up to 148 recorded species.

Output from workshop 3:

The 17 participants agreed that the responsibility for monitoring needs to be established; land managers may not have the knowledge or resources to do this so external help would be needed or arranged collectively within a group. This cost needs to be realistically identified for the long term. With publicly financed projects it needs to made clear who is responsible for the collation and management of the data. It was thought that a reliable source of advice would be needed for management of all types of intervention (whether for DEFRA, BNG, payments for carbon credits or others) and appropriate reaction to monitoring. There must be clarity at the outset on management, expected delivery, measurement and monitoring, and action if delivery is not achieved. Agreements

must include provision for non-delivery or over-delivery and plans for resilience against unplanned significant events like fire.

Output from workshop 4:

- The current system of self-reporting claim areas with the "threat" of inspection in the background was supported
- A reasonable amount of flexibility is desirable and a pragmatic attitude
- Self-certification was suggested as an alternative to inspection with photo evidence to back this up
- Penalties should be used if areas are not put into the planned interventions
- Building a good relationship with Natural England was seen as important
- Inspection early in an agreement is desirable so that problems can be ironed out promptly and future work guided in an optimal way

Outcomes

- Technology and apps will be needed to manage the volume of data collected
- A feedback loop to alter management would be helpful to achieve optimal outcomes
- Current audit schemes were suggested to monitor outcomes, with reservations that these systems could cope with additional work
- An independent monitoring report could be used for verification and to show compliance as a group in a scheme
- Remote sensing was suggested but with doubts that it could be accurate enough to identify specific features.
- Penalties or non-payment should not be applied if all requirements have been met by land managers but outcomes not delivered

100% of the 14 respondents to the questionnaire would be prepared to carry out simple monitoring and input photos and results into an app. 93% agreed that inspections should be carried out to check action has been taken with comment that this could be self-certification. However when asked who should monitor Landscape Recovery respondents there were mixed responses with 57% thinking that experts, farmers, and volunteers should all take part in monitoring.

How to align Landscape Recovery projects (as distinct from Local Nature Recovery projects) to wider Defra initiatives such as Net Gain and Nature for Climate projects which may also deliver land use change?

Baseline Survey, December 2022:

Aligning LR projects in the Brecks with Biodiversity Net Gain

76% of respondents reported that a Landscape Plan could identify the most appropriate areas for possible biodiversity net gain. 58% reported that a landscape plan could be used by a farmer group to work with councils and developers on biodiversity net gain and have an integrated approach. There were two strong opinions expressed against the use of a landscape plan for this. 40% believed that it is up to individuals to find areas for biodiversity net gain on land if they want to. It was suggested that the group could access net gain finance to increase AB11 payments, targeting critical areas of connectivity or competition with arable income.

Aligning LR projects in the Brecks with The Nature for Climate Fund

69% of respondents thought that a Landscape Plan could identify the most appropriate areas but 62% believed that it is up to individuals to identify areas. 42% thought a farmers group could work with councils and developers to have an integrated approach. Comment observed that peat exists (particularly in river valleys), that the right trees should be planted in the right places, and Brecks priorities must be understood.

Workshop 4:

The Facilitator and participants had difficulty interpreting this question, but the following feedback was recorded.

- Autonomy is important to BFWN members, agreements must allow this even if payment is made to the group as whole in LR and distributed to participants
- The ability to have different schemes on different areas of one Rural Land Register land parcel is important
- The ability to stack payments on one area of land is important and clarity needed on the rules around this (guidance from DEFRA is due soon)
- Extensive monitoring for schemes, by farmers or others, could soon be demanding of time and resources so needs to be appropriately paid for
- Within LR different models of funding distribution may suit different sources of funding and different participants so flexibility is needed

From the baseline survey

Aligning LR projects in the Brecks with Biodiversity Net Gain

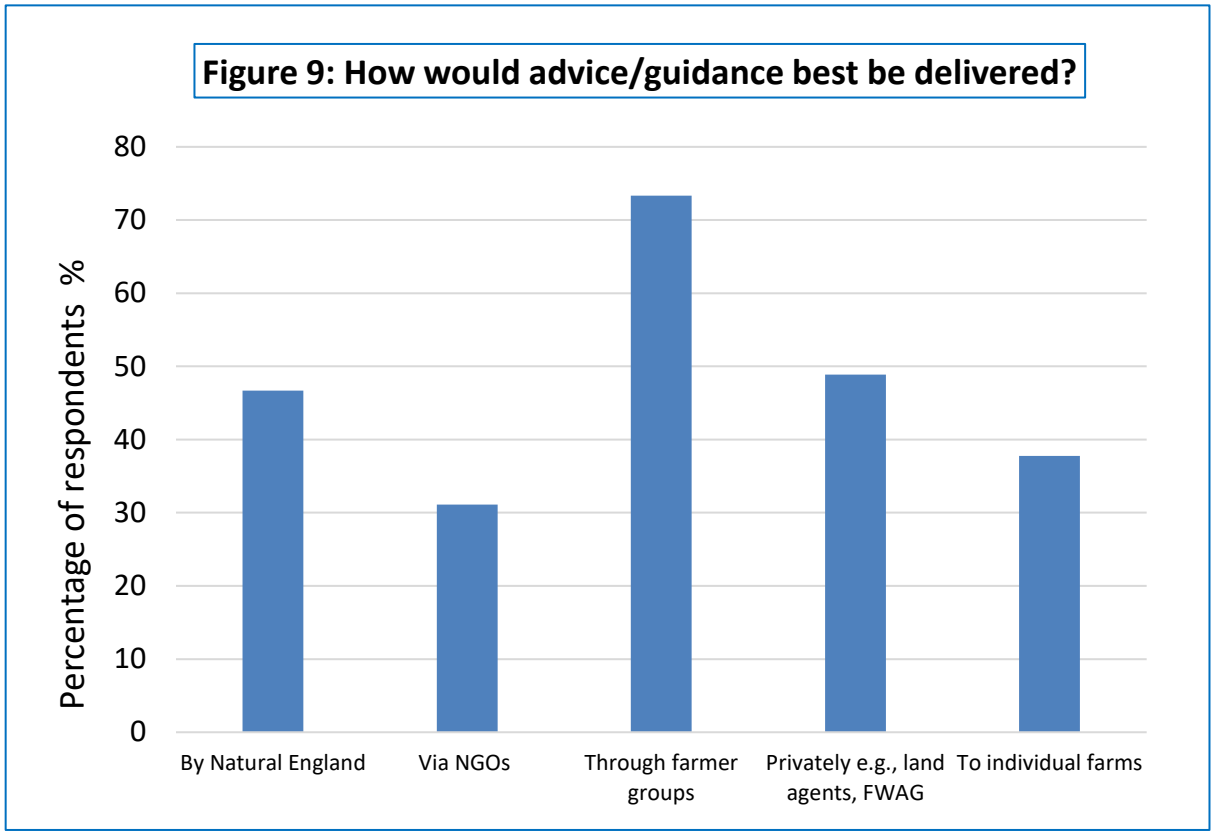
- 76% of respondents reported that a Landscape Plan could identify the most appropriate areas for possible biodiversity net gain. 58% reported that a landscape plan could be used by a farmer group to work with councils and developers on biodiversity net gain and have an integrated approach. There were two strong opinions expressed against the use of a landscape plan for this. 40% believed that it is up to individuals to find areas for biodiversity net gain on land if they want to. It was suggested that the group could access net gain finance to increase AB11 payments, targeting critical areas of connectivity or competition with arable income.

A**ligning LR projects in the Brecks with The Nature for Climate Fund**

- 69% of respondents thought that a Landscape Plan could identify the most appropriate areas but 62% believed that it is up to individuals to identify areas. 42% thought a farmers group could work with councils and developers to have an integrated approach. Comment observed that peat exists (particularly in river valleys), that the right trees should be planted in the right places, and Brecks priorities must be understood.

4.6 Workshop 5 – Advice and guidance:

a) How would advice/guidance best be delivered?



Members were asked about advice and guidance in the baseline survey with responses shown in Figure 9, 73% preferred delivery through farmer groups. Other suggestions included the use of conservation agronomists and specialist advisors with practical farming awareness and knowledge.

b) How could advice/guidance be financed (baseline survey responses) ?

87% of respondents believed advice/guidance should be funded by DEFRA through ELMs. 40% thought that the network should be funded to coordinate local delivery. This could appear at odds with the result of the previous question (Figure 9) in which 73% favoured advice/guidance through farmers groups. 18% felt that individual farms should pay for advice.

c) If the government funded or part funded the cost of advice, how would this best be received (grant, voucher or loan)?

Feedback in the workshop discussion strongly favoured funding for NE to provide advice on schemes direct to farmers, including more interaction for CS Mid-Tier agreements (or the future equivalent). The funding of Farm Environment Plans within schemes was seen as positive. Funding for farmer clusters/networks to be able to deliver advice was seen as an option but has the advantage of further complication. This also applies to vouchers, with a list of providers and a way of approving providers needed for them to work well.

d) Are you familiar with what sources of advice might be available to you?

Of the 17 farmers present who used stickers to respond yes or no, 100% were familiar with sources which included NE, EA, National Farmers Union, Country Land and Business Association, trade bodies, .gov.uk website, the Farming & Wildlife Advisory Group, Royal Society of Protection for Birds, RPA helpline (considered difficult to get appropriate advice from with examples of poor service and lack of accessible advice), BFWN, land agents, independent advisors, and NGOs such as Plantlife and the Wildlife Trusts. Table 11 shows the level of confidence in sourcing information from existing networks; respondents placed stickers in the most appropriate column on a chart at the workshop:

Table 10: Networks for information

Are you confident that the networks you get information from are sufficient for these topics (n= 11-13, not all answered all questions)			
	YES	NO	UNSURE
Integrated Pest Management	13	0	0
Water management for quality	11	0	1
Natural flood management	10	0	1
New tech/robotic/artificial intelligence	10	0	2
Agroecology	8	1	3
New revenue streams/markets	8	2	3
Agroforestry	6	5	1
Private finance	4	5	3
Carbon offsetting	4	5	4
Bioenergy	6	3	3

Integrated Pest Management (IPM) is a concept which has been accepted for some time (a central part of LEAF, Linking Environment & Farming, which began in 1991[7]) so unsurprisingly 100% were confident they had information on this. Water management for quality and natural flood management were presentation topics earlier in the workshop and this may have influenced the positive responses in this area. Agroforestry, private finance, carbon offsetting and bioenergy were the topics farmers had least confidence that they could access information on. Individual comments included that much is new, DEFRA need to decide on policy first, and there are too many unknowns with new sources of green finance.

e) If a scheme had simple options, would you still feel you needed advice?

From 16 responses to this question using stickers on a flipchart, 94% responded no, they would not feel the need for advice if schemes had simple options. Bearing in mind that workshop attendees could be some of the most engaged farmers, they are likely to be well-informed and motivated to find out information independently. Harder to reach farmers could need more encouragement and support in applying for and delivering schemes even if the options are simple. More advice could be necessary to increase uptake of schemes by these farmers.

f) Do you have time to invest in making sense of the information available to you and to work out what it means to you?

Using stickers on a chart, 73% of respondents replied that they do have time to invest in making sense of the information available and to work out what it means to them, and all the remainder responded

that they do not have time (n=22). 45% responded that they rely on others to make sense of information and 55% that they do not (n=14). 73% were confident that that the sources of information available to them are wide enough or complete and the remainder not confident (n=22). Individual comments included that much is new, DEFRA need to decide on policy first, and there are too many unknowns with new sources green finance.

The following evidence was gathered from discussions at the workshop. A short time was spent on each question resulting in instinctive immediate responses. There was a focus from farmers on discouraging performance from the RPA and lack of reliable and prompt advice.

g) What interaction do you currently have with ALBs, such as Forestry Commission or Natural England, and how can this be improved?

- Consistency is lacking in advice provision from the ALBs especially from the RPA. Since telephone contact has moved from NE good advice is difficult to get and those replying are not able to advise. This can mean that an answer to queries must be delayed, may not be appropriate, and can be conflicting. There appears to be high staff turnover and more specialist training is needed. Interactions between the RPA and NE appear to be difficult with the RPA appearing to be a barrier between farmers and NE. RPA staff lack understanding of local context e.g. cultivated margins. Locally BFWN has a good relationship with the local advisory team collectively working towards optimal management of local priority habitats and dissemination to member farmers, leaving a gap in information for non-members in the area.

- Contact with a single NE advisor would be ideal (it was commented that some members have a good direct relationship with NE regarding HLS agreements) Visits one to two years into schemes to discuss whether they are working and give appropriate advice would be productive at all scheme levels. This gives time to make amendments and it would be helpful to build relationships and improve environmental outcomes. Currently Mid-Tier CS agreements do not attract any personal interaction and it was felt that this would help for the best schemes to be created. It was suggested that a change of advisor could be requested where the relationship is not working.

- Mapping remains a problem with decreases in land area in schemes occurring due to re-mapping but no increase acknowledged. Features can be incorrectly mapped.

- Most interactions are with NE. Comments suggested that contact with the Forestry Commission is intermittent, with participants having little experience and they appear difficult to engage with. EA is a complex organisation, so participants find it difficult to know who to contact. Contact with Heritage England is only through obligatory screening of scheme proposals with the right to prevent options in schemes.

- DEFRA contact is mainly regarding cross compliance and again consistency is required to improve this.

h) What interaction with commercial advisers do you currently have? How can this be enhanced?

For ecological advice NE are definitely the preferred source of locally appropriate advice.

Advisers are chosen depending on the need, for example whether for business, agronomy or conservation advice and in all cases because they were trusted. Usually they would be chosen by recommendation through other farmers or BFWN. They were regarded as insurance in the application process for schemes and to remove what some regard as hassle in applying for schemes. It was suggested that one to many events, held by groups such as BFWN, could disseminate local information and signpost to advice. This could help to prevent inappropriate schemes being developed by commercial advisers without local knowledge.

The preferred model was one of interaction between the farmer, NE and a trusted advisor. The possibility of NE being trained to give business advice was not supported although it was accepted that an understanding from a business perspective was useful. It was felt that business advice was preferred from an expert business adviser or within the farming business. Individual businesses clearly wanted to retain control, but it was acknowledged that farmers need to know the impact of schemes on gross margins before entering them. This could be from knowledgeable sources internally or externally.

i) Are you confident that you can match up the appropriate adviser with the right schemes? Do you need support with this? If so, what form would you like the support to take?

Reputation, historic experience, and cost were all factors in that decision. The network was reported as a valuable forum for exchange of ideas and information. It was pointed out that having confidence to make choices did not necessarily result in the best decision.

Participants were sometimes unsure which ALB to use for which situation and agreed that it would be useful to have a list of advisors (ALB, independent, commercial) and their sphere of advice. This is especially pertinent when conflicts between ALBs arise, and these can take a long time to resolve. The Future Farming Resilience Fund (FFRF) was mentioned as a resource of advice on the changes occurring in agriculture at the present time and the Farm Advice and Land Management Advice Framework (FaLMA).

j) If the government funded or part funded the cost of advice, how would this best be received? (grant, voucher, loan)

Funding for NE to provide advice on schemes direct to farmers within the schemes was seen as the best way to provide advice. This should include adequate interaction for CS Mid-Tier (or future equivalent). The funding of Farm Environment Plans within schemes was seen as positive and desirable. Funding for farmer clusters/networks to be able to deliver advice was seen as an option but more complicated than direct funding. This also applies to vouchers, with a list of providers and a way of approving providers needed for them to work well.

k) Does the complexity of new agricultural actions you are asked to complete as part of a scheme, reduce the likelihood of you engaging with that scheme or action? Does it reduce your aspiration for the future?

The cost was reported as the driver; if payments are adequate there is an incentive to overcome the complexity. The effort is worthwhile if the recompense is good enough and this will drive aspiration.

An example is SFI, where uptake has been low due to the payment rates. If payments are enough for a farming business, then engagement and motivation will follow.

l) **For new or complex activities outside your current farming system, does upfront investment (eg specialist advice, baseline measurement, surveying) deter you from engaging with those activities? Even if you can see that the new activities will bring long term benefits like business security, and environmental, financial, and social improvements.**

Again financial returns are the most important factor so new and complex activities were not seen as a deterrent if the eventual financial benefit to the business could be demonstrated. It was suggested that baselines and initial investment could be publicly funded to encourage participation.

m) **If you need delivery support:**

- **how do you see this being met? Online specialist webinar, on farm demonstrations, workshops, peer to peer support, one to one advice, one to few/many advice?**
- **are the structures already in place to support any of the above?**
- **If so, what are they?**

Webinars were not favoured. In person, and especially practical sessions in the field and farm demonstrations, were seen as best, depending on the topic. Whether events are one to few or many depends on the nature of support needed. BFWN is an existing structure well placed to provide support for delivery, already with relationships with ALBs, NGOs and commercial organisations. However, not all farmers belong to BFWN.

n) **If more complex options came with a level of free advice, would that provide further incentivisation to try them?**

It was agreed that free advice would be an incentive.

o) **What would incentivise you to pay for advice?**

Sufficient payment for scheme participation would incentivise this.

p) **Before the application process – what support do you need?**

Once the new ELMs are fully developed it would be useful for the network to be able to disseminate information. If schemes are competitive then it is useful to have clear information on the likelihood of success is before putting cost and effort into applying

q) **Do you have all the information you need and how it could apply to your holding?**

At present not all information is available about all schemes. More guidance on complex schemes would be helpful. In Landscape Recovery no advice was provided at the application stage, only guidance which disadvantaged farmer groups from applying.

5.0 Limitations and final reflections

5.1 Qualitative v quantitative output

Much of the output is qualitative and there is a risk that dominating characters in workshops have a large influence on output. Participants were always asked to feed back to the facilitator following the meeting if they had further contributions or thoughts having had time to reflect. This allowed for less confident speakers to contribute if they wished. No responses were received apart from to specific questionnaires. In some workshops speakers were included in discussions and there is a possibility that discussions were less open than with just farmer participants, although observation on the day did not indicate that.

Quantifying responses was difficult without constraining open discussion as providing options tends to lead participants towards set responses. Sending post workshop surveys was trialled followed the poorly attended summer workshop but only three responses were received. Considerable time and effort from the facilitators had been needed to get the high number of responses for the baseline survey. At the two later workshops simple anonymous questionnaires and boards with yes/no responses were used but not all attendees completed them although they were repeatedly encouraged to.

5.2 Participatory bias

There were a supportive and engaged core of participants who attended most workshops. Members of BFWN farm over 70% of the farmed area in The Brecks and are probably those most engaged with the agri-environment landscape, likewise the workshop attendees are the most interested from the membership so participatory bias is likely.

5.3 Attendance and engagement

Interesting speakers around the topics for each workshop were invited to encourage attendance. It was expected that DEFRA attendance would help but this had a limited effect. Nevertheless this was very popular among those who did attend. More in person engagement from DEFRA earlier in the project could have helped but this was not possible due to Covid 19 restrictions.

In the baseline survey 91% of respondents wanted to find out more about ELMs and the realisation that Test & Trial could not provide that may have reduced attendance.

Workshops were timed to avoid the busiest time of year but attendance in June was lowest and this was most likely due to seasonal work pressures.

The original proposal for 174a involved a much larger project supervised by Dr James Gilroy working on further use of the BBA data for different purposes. The whole group was very inspired by the scientific basis of work in 174 and reduction of this project to mainly policy questions made it less appealing and more difficult to engage members with.

5.4 Refining questions

Better interaction with the policy teams on realistic question setting for farmers could improve interaction and output.

Conclusions

There were recurring main themes in the Test & Trial. The scientific evidence from the Breckland Biodiversity Audit and subsequent work in the Brecks leading to the network of cultivated margins was highly supported. Incentivising the implementation of this to all farms in the Brecks through adequate payments backed up by supportive reliable advice was seen as key. Local prioritisation for this action, possibly through a collaboration bonus, was a popular suggestion in this and the previous Test & Trial. Current CS payment rates do not take account of the specific biodiversity benefits of cultivated margins in the Brecks and the economic environment in an area of highly productive agriculture. Proper valuation of all the benefits of cultivated margins in the Brecks to ecology and well-being is needed. The need for flexibility in LTAs was emphasised throughout as there is willingness in the region to engage with long term conservation but with review or break clauses of benefit to farmers and to optimise environmental improvements over time. There was significant support for the monitoring protocol developed by Dr James Gilroy and hopes that this will be implemented in the future.

Acknowledgements

A heartfelt thank you to the farmers and land managers who attended the workshops, especially the loyal supporters who were present throughout the Test & Trial. They include the Cluster Leaders: Richard Evans (Lead Farmer), Andrew Blenkiron, Steve Mumford and Tim Young and the BFWN Steering Group. We are very grateful to our partners; Dr James Gilroy from the UEA, Johanna Jones and Tim Pankhurst from Plantlife, and Dr Rob Hawkes (RSPB) for his support. Thank you to Rob Hughes and Alida Tysterman from Brown & Co for engaging with the project.

Thank you to all the speakers and external participants at workshops: Nick Sibbett (The Landscape Partnership Ltd), Teresa Dent (GWCT), Professor Brian Reid (UEA), Becks Mundy (NE), Claire Robinson (NFU), Lucy Hatcher, Emily Swan and Ian Trouse (NE), Sam Hurst (NRT) and Rob Holland (AW).

Finally, a big thank you to our DEFRA Test & Trial Officers, Louis Rimmer and Stephen Boxall, who both provided excellent support and Sam Burford, Chaz Butterworth, Nick Bruschi from the DEFRA policy teams who were all able to attend a BFWN workshop.

6.0 References

1. National Character Area profile: 85. The Brecks. Available at http://publications.naturalengland.org.uk/publication/4282581

2. Hawkes, R.W., Dolman, P. M. & Gilroy, J. J. (2021) Breckland Farmer Wildlife Network Test and Trial Report: Delivering evidence-based 'better, bigger and more joined up' conservation through agri-environment schemes and farm cluster groups. Report to Defra, available at https://brecklandfarmerswildlifenetwork.org/defra-test-and-trials-report-2020-21/

3. Dolman, P. M., Panter, C. J., & Mossman, H. L. (2012). The biodiversity audit approach challenges regional priorities and identifies a mismatch in conservation. *Journal of Applied Ecology*, *49*(5), 986-997

4. Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/972093/regionalstatistics_east_23mar21.pdf last accessed 17th January 2023

5. Available at https://www.google.com/maps/d/viewer?mid=1SCA11m0YRzVgZSr8eTgpbx7b_wCxogXT&ll=52.33365416036295%2C0.6237072795668386&z=11 last accessed 17th January 2023

6. Farm Business Survey Data Builder available at http://farmbusinesssurvey.co.uk/DataBuilder/Default.aspx?module=UGExampleFarmersAge.Type last accessed 25th January 2023

7. Available at https://leaf.eco/about-leaf/what-we-do last accessed 25th January 2023

7.0 List of Documents

174a BFWN Final Report 310123

174a BFWN Annex 1 Brown & Co AB11 Analysis 310123

174a BFWN Monitoring Test report UEA Jan 2023

174a BFWN Annex 2 Monitoring protocol leaflet 2023

174a BFWN Annex 3 analysis template dummy data

Appendix 1: Brown & Co Summary for Workshop 1 on payments

Breckland Farmers Wildlife Network

The Breckland Farmers Wildlife Network approached Brown & Co about developing a model in which to capture data from farmers in The Brecks in order to collate and calculate a figure in which farmer members would be willing to take land out of production for the benefit of cultivated margins – Countryside Stewardship option AB11. The current payment rate of AB11 under Countryside Stewardship is £544/ha, recently increased from £532/ha – a payment increase of only 2.25%.

The AB11 margins have been highlighted by the UEA's Breckland Diversity Audit as being most advantageous in advancing the diversity of ecosystems in the Breckland area. The seeming reticence from landowners and managers in adopting change maybe that, at certain points in the rotation, they are able to grow high value crops, either in-hand or perhaps by somebody else under licence. These high value crops yield a far more beneficial headline return than Countryside Stewardship – which is based on an income forgone principle and does not reflect the high financial output generated from the crops which are well suited to the Breckland soils.

Methodology

The data was gathered via a spreadsheet emailed out to all Breckland Farmers Wildlife Network members, which required farmers to enter gross margin data for Harvest 2021 for crops grown in The Brecks Area – this included stewardship options of a field scale – for example AB9 or AB15. Additionally, famers were asked to include any land let out under Cropping Licences – and included within this any irrigation water sales. The weighted average gross margin across the farm area was then calculated on a pounds per hectare basis. The weighted average calculation takes into account the importance of the data sets – in this instance the area of cropped land vs the area of land grown under cropping licences – ensuring that high returning cropping licenses on small areas of land proportional to the whole cropped holding, do not skew the average gross margin of the farm.

Each weighted gross margin figure returned from the member farmers was compiled to a master spreadsheet and anonymised by a Farmer number (e.g., Farmer 1, Farmer 2, Farmer 3 etc.). The weighted average of the group was calculated. It was decided not to include fixed costs in the calculation to get to net margin level and instead assess weighted gross margins – due to the complexity of calculating net margin for the sample of farmers, as well as removing margins from production to AB11 is unlikely to significantly alter farm fixed costs.

Findings

The total sample size was 13,785 hectares, which comprised of 17 farmers. More than half of the sample was comprised of farms less than 500 hectares. The findings show that the average weighted gross margin from the sample of 17 farmers in The Brecks is £1,429.95 per hectare. The highest weighted gross margin was £2,274/ha and the lowest weighted gross margin was

£471.11/ha. The findings show that the high value vegetable cropping represent the highest weighted gross margin – average weighted gross margin across the sample of £2,368.74/ha compared to just combinable crops and sugar beet which gives a weighted average gross margin in the sample of £803.83/ha.

Conclusions

From the data collected and analysed as part of this project, it can be ascertained that the current payment of £544/ha for AB11, calculated on an income forgone principle, is considerably lower than the gross margin potential of cropping with combinable crops or high value vegetable crops (weighted average of £1,429.95). It is the high value vegetable crops that are grown in the area which increase the crop gross margins.

Appendix 2: FOI Request on AB11 rate calculation

Department for Environment Food & Rural Affairs

Nobel House
Area 1E
17 Smith Square
London
SW1P 3JR

T: 03459 33 55 77
helpline@defra.gov.uk
www.gov.uk/defra

Cathy Mumford
By email: cathyjmumford@gmail.com

Our ref: EIR2022/06264
31 March 2022

Dear Cathy Mumford,

REQUEST FOR INFORMATION: Countryside Stewardship Revenue Payment Rates

Thank you for your request for information of 9 March 2022 about Countryside Stewardship revenue payment rates. We have handled your request under the Environmental Information Regulations 2004 (EIRs).

The EIRs apply to requests for environmental information, which is a broad category of information defined in regulation 2 of the EIRs. Public authorities are required to handle requests for environmental information under the EIRs. They give similar access rights to the Freedom of Information Act 2000 (FOIA).

Your information request and our response are set out below.

I am writing to request information on how the revised Countryside Stewardship rates announced on Countryside Stewardship revenue payment rates from 1 January 2022 - GOV.UK (www.gov.uk), last update on 9th February, were calculated.

Specifically, I am asking for detailed information on how the value for option AB11 "Cultivated Areas for Arable Plants" was calculated, including cropping, values and years used for income foregone. I would like to know fully how the revised amount of £544 was arrived at.

Below are the income forgone calculations for AB11: Cultivated areas for arable plants, which we have used to inform the payment rate. Our methodology of income forgone plus costs shows that the income change has increased from £532 to £550. To ensure we could increase the payment rates for existing customers as well as new customers we decided to pass through two thirds of the increase. As the calculated increase was £18, two thirds of which is £12, the new payment rates are £532 + £12 = £544.

AB11 – Cultivated areas for arable plants

2021	**Loss**	**Gains**
	£/ha	£/ha
Extra Income		
Sub-total		Nil
Costs Saved		

Interest on working		12
Savings in fixed costs		233
Sub-total		***245***
Income Lost		
Loss of arable		701
Sub-total		***701***

Extra Costs		
Plough and press +	74	
Non selective	5	
Topping	15	
Sub-total	***95***	
Total	796	245
Income Change	**550**	

Information disclosed in response to this EIRs request is releasable to the public. In keeping with the spirit and effect of the EIRs and the government's Transparency Agenda, this letter and the information disclosed to you may be placed on GOV.UK, together with any related information that will provide a key to its wider context. No information identifying you will be placed on the GOV.UK website.

We attach Annex A, explaining the copyright that applies to the information being released to you, and Annex B giving contact details should you be unhappy with the service you have received.

If you have any queries about this letter, please contact me.

Yours sincerely

Marie Davies
Information Rights Team
InformationRequests@defra.gov.uk

Appendix 3: Examples of problems associated with weed species in field margins adjacent to vegetable crops

2 examples of broad leaved weeds and 2 grasses with their associated pest and disease hosting "ability":

Perennial & Annual sow thistle (Sonchus arvensis, Sonchus spp.)

- Produce up to 10,000 viable seeds/year
- Host thrips (risk to onions and sugar beet)
- Violet root rot (Helicobasidium purpureum) – numerous crops affected e.g. carrots, celery, parsnips, potato
- Black bean aphid (Aphis fabae) can carry both BYV (beet yellows) and BtMV (beet mosaic) viruses. Sugar beet, celery and beans
- Lettuce root aphid (Pemphigus burarius) attack roots and can carry LMV (Lettuce Mosaic Virus)
- Common green capsid (Lygocoris pabulinus) can damage potatoes but tend to be more of an issue in flowers
- Chrysanthemum leaf miner (Phytomyza syngenesiae) in lettuce, brassicas and celery

Field Pansy (Viola arvensis)

- Produce up to 2,500 seeds per plant
- Cavity spot (Pythium violae) which is a major disease of carrots and parsnips

Annual Meadow Grass (Poa annua):

- Single plant can produce over 10,000 seeds and flowers independently of day length
- Hosts Ergot (Claviceps purpurea) disease in wheat, rye, barley and triticale
- Shallot aphid (Myzus ascalonicus) can affect potatoes, lettuce, brassicas, onions but primarily shallots, strawberries and sugar beet. Host up to 20 plant viruses including BYV, Rhizoctonia solani (PLRV) and BtMV.

Common Couch (Elytrigia repens):

- Violet root rot (as above)
- Swift moths (Hepialus lupulinus and H. humuli), These include the ghost moth and are a localise dpest of carrots, lettuce and cereals. Larvae cut off plants below the ground and tunnel into roots and stems
- Ergot (as above)
- Take-all (Gaeuumannomyces graminis). Yield reduction in affected cereal crops (primarily wheat, triticale, rye and barley).
- Particularly invasive due to it spreading through horizontal stems (rhizomes) or over ground (stolons)
- 50 seeds viable per plant

Other species, such as hog weed, fools parsley, and wild carrot all host carrot and parsnip aphid and associated viruses. NB Where a diverse mix of species are seen these effects are often negated and are exacerbated by monocultures.

James Rimmer, Vegetable Consultancy Services