

ParkLife

Cultivating a farmer-led approach to biodiversity management in Shetland

KTIF Final Report



January 2021

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1. PROJECT TITLE/APPLICANT

1.1 Title

ParkLife: Cultivating a farmer-led approach to biodiversity management in Shetland

1.2 Overview of your company

Shetland Livestock Marketing Group Limited (SLMG)

SLMG is the key service provider for the Shetland agricultural community. It combines livestock marketing, meat processing, farm assurance and animal health. Its purpose is to maintain and develop a viable co-operative business providing an auction mart and abattoir to serve crofting, farming and the community of Shetland. It has 270 members.

Royal Society for the Protection of Birds (RSPB) Scotland

RSPB Scotland is part of the RSPB, the UK's largest nature conservation charity. The organisation works with farmers to find and share practical wildlife-friendly farming techniques. It also campaigns for policies which provide a fair deal for farmers, consumers and wildlife. It advocates sustainable farming which provides safe, healthy, affordable food, protects and enhances the environment and its wildlife, supports diverse and attractive landscapes and contributes to a thriving rural economy.

In Shetland, the RSPB has been running projects to engage the community in nature conservation, manages nature reserves including several sites for breeding waders, and has been supporting farmers and crofters to enter agri-environment schemes.

2. EXECUTIVE SUMMARY

The ParkLife project was implemented between March and December 2020 by the Shetland Agri-Environment Group. The aim was to empower the farming/crofting community to take a leadership role in managing its environmental resources for the benefit of biodiversity. It focused on trialling farmer participation in the monitoring of breeding waders and their habitats.

The Shetland Islands are home to high numbers of breeding farmland waders, including nationally important populations of red-listed lapwing and curlew. The characteristic landscape mosaic of wetland and heather moorland adjacent to agriculturally improved grasslands, supported by extensive, small-scale agricultural systems, provides quality habitats for relatively high densities of waders. The maintenance of these habitats relies on the continuation of active and positive land management.

SLMG contracted a project co-ordinator. RSPB staff lead the habitat and bird monitoring elements. The project utilised and shared expertise and resources available within the Shetland Agri-Environment Group.

A group of 10 land managers was contracted, trained, supported and rewarded to carry out environmental monitoring on their own land during the wader breeding season. They recorded bird data and a series of habitat attributes including vegetation length, ground wetness and plant diversity. Soil sampling and earthworm counts on survey sites were conducted by project staff.

Each participant was interviewed at the start and at the end of the project to understand their motivations and provide feedback on their experience in the project and evaluate its impact. The project supported the creation of a Wader Grassland scorecard that measures habitat quality and incentivises beneficial management practices. The leaflet 'Farmland waders in Shetland – A best practice guide for farmers and crofters' was also produced and widely distributed in local agricultural community.

Project outcomes

- Surveying waders and habitats has increased participants' awareness and knowledge of biodiversity on their land and grown their confidence in monitoring wildlife. They enjoyed the experience and would encourage others to take part in future surveys.
- Wader surveys by farmers have provided a new source of data on farmland species and habitats, building capacity to enhance knowledge of waders in Shetland. They have also improved farmers' connection to wildlife.
- Participants' showed a high level of interest in wildlife and willingness to integrate its conservation in farm management planning, with appropriate support. Owning ecological knowledge of species and habitats can give farmers the resources to deliver biodiversity conservation in the long-term.
- Following further testing, the Wader Grassland scorecard can provide a tool for farmers and crofters to improve habitats for waders, using their land management skills. It could also give them quantifiable evidence of the environmental value of their land for waders.

3. PROJECT DESCRIPTION

The Shetland Agri-Environment Group is an informal and committed group set up in August 2018 by members of Shetland's environmental and farming communities, to work together to secure a sustainable future for agriculture and the environment in Shetland. The group brings together representatives from SLMG, Shetland Amenity Trust (SAT), National Farmers Union Scotland (NFUS), Shetland Islands Council - Natural Heritage, Scottish Organic Producers Association (SOPA), Scottish Agricultural College (SAC) Consulting, RSPB Scotland and interested farmers and crofters.

The project was seeking to initiate a shift in farmers' perspective towards biodiversity and turn environmental outcomes into key products with a clear economic value, which delivery depends on farmers' skills and knowledge. It built on the success of locally-led, results-based schemes in other countries, and on discussions with a local group of farmers and crofters on the potential for the approach to be adopted in Shetland.

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The aim of the project was to empower the farming/crofting community to take a leadership role in managing its environmental resources for the benefit of biodiversity. It focused on trialling farmer participation in the monitoring of breeding waders and their habitats. The information collected by participants was used to develop a wader habitat scorecard and best-practice guidance for farmers and crofters was created and widely distributed, to support land management for waders at the landscape scale.

A group of 10 land managers was contracted, trained, supported and rewarded to carry out environmental monitoring on their own land during the wader breeding season. They recorded a series of habitat attributes and bird data. SLMG contracted a project co-ordinator. RSPB staff lead the habitat and bird monitoring elements. The project utilised and shared expertise and resources available within the Shetland Agri-Environment Group.

The project contributed to the SRDP's priorities to:

- protect and improve the natural environment;
- support agricultural businesses and rural communities;
- enhance the rural economy.

It also delivered towards:

- the 2020 Challenge for Scotland's Biodiversity's aim to protect and restore biodiversity on land, by supporting High Nature Value farming and improving farmland wildlife conservation, increasing land managers' awareness of the importance of nature in their business and working collaboratively to address biodiversity challenges.
- the National Islands Plan's objectives to improve and promote sustainable economic development (Strategic Objective 2) by ensuring that crofting and sustainable land use including agriculture continues to provide jobs and opportunities to island communities, to improve and promote environmental wellbeing (Strategic Objective 8) by protecting island biodiversity, and to empower diverse communities and different places (Strategic Objective 10), by exploring ways to strengthen the voice of island communities.

Operational group

Members

- John Abernethy, Crofter in West Mainland
- Hilary Burgess, Veterinary Surgeon
- Cecil Eunson, Shetland Livestock Marketing Group Chairman
- Graham Fraser, Senior Consultant, SAC Consulting
- Paul Harvey, Project Officer - Natural Heritage, Shetland Amenity Trust (SAT)
- Robert Nicolson, Farmer in South Mainland and Crofter in West Mainland
- Nathalie Pion, Conservation Advisor, RSPB Scotland
- Lorna Scott, Regional Policy Advisor, National Farmers Union Scotland
- Joanna Sinclair, Membership Support Officer, Scottish Organic Producers Association
- Austin Taylor, Natural Heritage Officer, Shetland Islands Council (SIC)
- Sue White, Peatland Action Project Officer, Shetland Amenity Trust

Responsibilities

Operational group: Shetland Agri-Environment Group

- 3 meetings
- project direction
- input in and feedback on project outputs
- publicity through members' networks

SLMG

- Contract a Project Co-ordinator (Susan Wilson)
- Provide the overall leadership and management of project delivery, organising Operational Group meetings and maintaining appropriate records
- Be the main point of contact for Scottish Government
- Have responsibility for administering project finances, submitting and processing claims
- Co-ordinate the recruitment and selection of participants
- Co-ordinate the creation of project communications including press releases
- Carry out initial and final interviews with participants
- Provide general support for participants.

RSPB Scotland (Nathalie Pion)

- Contribute to project publicity and participant recruitment
- Design monitoring protocols
- Deliver training on monitoring protocols to participants, and feedback workshop
- Liaise with participants and provide 1:1 advice and support on monitoring throughout the project
- Carry out soil sampling and earthworm surveys on survey sites
- Analyse monitoring results and prepare individual reports for participants
- Co-ordinate development of a wader habitat scorecard and best-practice management guidance, including publication
- Provide accurate invoices and reports to SLMG
- Contribute to the dissemination of project outputs
- Contribute to the evaluation report at the conclusion of the project.

Graham Fraser (SAC Consulting), Paul Harvey (SAT) and Austin Taylor (SIC) have contributed to the development of the wader habitat scorecard and best-practice guidance.

4. FINANCE

4.1 Sum awarded

Initial grant awarded: £47,320

Revised: £43,992

4.2. Detail of spend

Total spent: £40,381.14

A separate spreadsheet details the budget.

4.3. Noting any underspend and explain why

Total underspent: £3,610.86

Due to Covid19 restrictions, live events including training and workshops were cancelled. Online meetings were organised instead. Figures are detailed in a separate spreadsheet.

5. PROJECT AIMS AND OBJECTIVES

Aim

To empower the Shetland farming/crofting community to take a leadership role in managing its environmental resources for the benefit of biodiversity.

The project focused on trialling farmer participation in the monitoring of breeding waders and their habitats, as a model for other environmental outcomes dependent on agricultural practices in Shetland.

Objectives

1. To identify successful land management practices in Shetland that deliver high-quality breeding wader habitat and produce locally relevant best practice habitat management guidance.
2. To develop a simple, transparent and understandable scoring system that measures wader habitat quality on Shetland farms/crofts.
3. To build capacity and confidence within the Shetland farming/crofting community for monitoring waders and their breeding habitats and facilitate adaptive management relying on farmers' knowledge and skills.

6. PROJECT OUTCOMES

6.1 How aims and objectives were achieved

Asked at the start of the project what would help them improve land management for wildlife, project participants cited 'knowledge' and 'funding'. The project provided an opportunity to trial an approach that would increase farmers' knowledge of the wildlife on their land, so they could use their land management skills to take informed action to protect it in the future.

Objective 1

The leaflet 'Farmland waders in Shetland – A best practice guide for farmers and crofters' has been produced in partnership with an illustrator and a designer. 1000 copies have been printed and close to 600 have been sent to SLMG members and contacts in the agricultural community. The remaining stock is available for distribution by project partners.



An illustrated management guide for wader habitats in Shetland

Objective 2

A Wader Grassland scorecard has been created with input from stakeholders and experts within and outwith Shetland. RSPB project staff (Nathalie Pion) lead the development of the scorecard. Comments on various iterations were provided by Graham Fraser (SAC), Paul Harvey (SAT), Austin Taylor (SIC), Norrie Russell and Kate Clarke (RSPB Scotland), Jonathan Swale (NatureScot) and Robyn Stewart and Gwyn Jones (European Forum on Nature Conservation and Pastoralism). Project participants were invited to attend an online workshop to introduce the scorecard concept and discuss the proposed indicators. Members of the operational group were also asked to provide feedback. Unresolved questions remain on some indicators, including the use of stocking densities as proxy for risk of nest trampling and bird disturbance. The latest version of the scorecard will require extensive testing in the field during the spring to ensure it accurately measures habitat quality and effectively guides land managers towards beneficial management. It is expected that the scoring system will evolve, and amendments will be necessary as it gets used and better understood.

WADER GRASSLAND SCORECARD

Improved/semi-improved Unimproved

A. Ecological Integrity /40

A.1 What is the sward structure?

Poor	Moderate	Good	Very good
The sward is uniformly tall (> 35 cm) or short (< 5 cm). Intermediate sward is absent or limited to small patches.	The sward is mostly tall (> 15 cm) or short (< 5 cm), with localized areas of intermediate heights.	The sward comprises large distinct areas of different heights, i.e. areas of tall (> 25 cm), short (< 5cm) and/or intermediate heights.	The sward is a fine mosaic of vegetation heights. Discrete patches of bare ground and/or tall, dense vegetation may be present.
0	5	10	15

Alternatively, if there is evidence of breeding lapwing:

Poor	Moderate	Good	Very Good
The sward is uniformly tall (> 35 cm). Intermediate sward is absent or limited to one or two discrete areas.	The sward is over 90% short (< 5 cm), with any intermediate/tall sward limited to one or two discrete areas.	The sward comprises large distinct areas of different heights, i.e. areas of short (< 5cm), intermediate and tall (> 25cm) sward heights. Short sward covers 25 to 50% of the field.	Over 50% of sward is short with a fine mosaic of patches of intermediate and tall vegetation scattered across it. Discrete patches of bare ground may be present.
0	5	10	15

A.2 What is the number of positive indicator plant species?

Low	Medium	High
<3	3-4	>4
0	5	10

Positive wetland plant indicators

- Bogbean
- Cuckooflower
- Devil's-bit scabious
- Lesser spearwort
- Loosewort - common and marsh
- Marsh cinquefoil
- Marsh marigold
- Marsh pennywort
- Marsh willowherb
- Meadowsweet
- Ragged robin
- Cotton-grass
- Sedges - other species

A.3 a. Unimproved: What is the frequency of positive indicator plant species?

None/rare	Occasional	Frequent	Abundant
No positive indicator recorded or < 3 indicators on any length of W survey route.	3 or more positive indicator species recorded on 1 or 2 lengths of W survey route.	3 or more positive indicator species recorded on 3 lengths of W survey route.	3 or more positive indicator species recorded on 4 lengths of W survey route.
0	5	10	15

A.3 b. Improved / semi-improved: What is the earthworm count*?

Low	Medium	High
<10	10-24	25-34
0	5	10

*In 5 pits, 20x20x20 cm

WADER GRASSLAND SCORECARD

B. Condition in the breeding season (April-June) /55

B.1 What is the ground wetness in the spring?

Dry	Soft	Damp	Damp-Wet
The water level is at/just below the surface on <10% of the area. The ground is mostly dry and hard, difficult to probe with a spade.	The water level is at/just below the surface on <20% of the area. The ground is mostly fairly easy to probe and it gives slightly under foot.	The water level is at/just below the surface on 10-50% of the area.	The water level is at/just below the surface on >50% of the area.
-10	0	10	15

B.2 What is the condition of wet features (e.g. natural hollow, wader scrape, open drain) in the spring?

Poor	Moderate	Good	Very good
Field contains no shallow-wet features (<30") with gently sloping edges (<30") holding water in spring. Vegetation on the edge of features is mostly dense.	Field contains shallow wet features (>20") with gently sloping edges (<30") holding water in spring. Vegetation on the edge of features is mostly open, with some muddy patches. Access to wet features is restricted due to obstacles (e.g. burn, large ditch).	Field contains shallow wet features (>20") with gently sloping edges (<30") holding water in spring. Vegetation on the edge of features is mostly open, with some muddy patches. Access to wet features is restricted due to obstacles (e.g. burn, large ditch).	Field contains shallow wet features (>20") with gently sloping edges (<30") holding water in spring. Vegetation on the edge of features is mostly open, with some muddy patches. No access restriction.
-5	0	10	15

B.3 Is cover for nests and chicks available?

Absent	Scarce	Abundant
No grass or rush tussocks.	Some patches of rushes or grass tussocks present, but scarce or limited to small sections of the field.	Patches of rushes or grass tussocks frequent throughout the field.
-5	0	5

B.4 What is the impact of management practices in the spring?

Are breeding waders present in the field between 1 April and 30 June (falling, displaying, nests and/or chicks)?

Yes No Assume neutral impact

Significant negative impact	Moderate impact	Positive impact
Size of machinery with nests unmarked. Nests marked and avoided during machinery operations.	Nests marked and avoided during machinery operations.	No machinery use.
-10	0	5

AND

Grazing density is over 1 cattle/ha or 3 sheep/ha.	Grazing density is 0.35-1 cattle/ha or 1-3 sheep/ha.	Grazing density is under 0.35 cattle/ha or 1 sheep/ha.
-10	5	10

C. Threats to Site Integrity /5

C.1 What is the cover of thatched vegetation?

High	Medium	Low
>25%	15-25%	<15%
-10	0	5

C.2 What is the level of encroachment (e.g. Iris, soft rush)?

High	Medium	Low
>50%	31-50%, in distinct blocks	31-50%, scattered
-20	-10	-5

C.3 Is there evidence of damaging activities to vegetation, soil or water?

E.g. Damage to soil and/or sward from machinery or poaching, ploughing of unimproved grassland, installation of new field drainage system, supplementary feeding site in unimproved areas, tree planting within or on the boundary of the site.

High	Medium	Low	No damaging activity
>10% of the site	6-10% of the site	1-5% of the site	
-20	-10	-5	0

Condition	0	1	2	3	4	5	6	7	8	9	10
Score	0	1	2	3	4	5	6	7	8	9	10
Points	120	100	80	60	40	20	0	10	15	20	25

Shetland Wader Grassland Scorecard

Objective 3

Participants were offered online training and written guidance to carry out biodiversity surveys, and remote support throughout the survey season by phone and through a WhatsApp group. Interviews with participants at the end of the project showed that they all had gained knowledge of the wildlife on their land and learnt how to monitor it. They also had enjoyed the experience. In a video recording ([link](#)), three participants speak of their increased awareness of waders on their land as a result of doing the surveys, and their intent to take action to protect them by adapting their management practices.



Identification guides for farmers: wader video on YouTube and plant photo sheet

6.2 Milestones

Outreach/engagement

The project launched online in early April with an introductory video shared on social media and in the local press. An online 'expression of interest' form was used to register interest. 10 farmers and crofters were selected by the operational group from 27 applications, based on geographic location, unit size and farming system, history of participation in agri-environment scheme and organic status. The objective was for the group to be as diverse as possible.

The SLMG project co-ordinator interviewed each participant using a prepared set of questions (Annexe 1), once at the start of the project, and again at the end to understand participants' motivations, views and background, to provide feedback on their experience in the project and evaluate its impact.

Two online feedback sessions were offered to participants in October to give an opportunity to review the proposed scorecard.

A public online event was organised on 21 November to raise public awareness of nature-friendly farming and results-based schemes and present the results of the project. Eight speakers from Scotland, England and Ireland contributed and shared their experiences and expertise on nature-friendly farming, results-based schemes and farmland waders.

Monitoring

Participants were asked to provide a map of their unit and select five survey areas on their inbye land, with a range of intensity of land uses. As initial training couldn't be delivered in the field as planned, training materials were developed including a wader identification video, plant identification sheet and written survey guidance. Short online training sessions were delivered. A WhatsApp group was created to provide an opportunity for participants to ask questions and exchange comments on their experiences in the field. Each participant was sent survey maps and recording sheets. They were asked to record waders and measure vegetation length and density, and ground wetness at least once a month between May and early July and carry out one plant survey in June or July. Recording sheets used in the project are copied in Annexe 2. RSPB Scotland project staff visited all participants' farms to collect soil samples and do a worm count on each of the survey areas. The soil samples were sent to the SAC lab for an analysis of pH and organic matter content. At the end of the wader breeding season, RSPB staff compiled and analysed all data collected and returned individual reports to participants (example in Annexe 3).



Location of ParkLife participants' farms in Shetland

Best-practice habitat management guidance and scorecard development

The 'Farmland Waders in Shetland – A best practice guide for farmers and crofters' has been produced in partnership with an illustrator and designer. 1000 copies were printed at the end of December. It has been sent out to around 600 SLMG members and contacts and a stock of copies remains freely available. Feedback to date has been positive. The aim is now for the guidance to translate into action on the ground.

A wader grassland scorecard has been developed based on results collected by project participants and knowledge of breeding waders' requirements. It also builds on existing relevant scorecards from results-based projects, including the Pearl Mussel Project grassland, the Hen Harrier Project wet grassland and the Yorkshire Dales National Park habitat for breeding waders scorecards. The Shetland scorecard has been reviewed through engagement with a range of stakeholders and wader conservation experts.

7. LESSONS LEARNED

7.1 Issues/Challenges

- Farmers and crofters selected to take part in the project have conscientiously carried out the surveys. Unlike standard farmland wader surveys where surveyors visit a site three times in spring, farmers are present throughout the season. They can collect useful new information on the presence and success of breeding birds on their land. The surveys were a trial and there is room for improving the methodology to better fit in with agricultural activities. For example, participants were asked to measure sward height monthly. This proved time-consuming. One sward assessment in the early or mid-season would be enough. More specific timing of bird surveys could be included (early morning). The challenge is to set a methodology that provides a useful dataset from an ecological perspective, while keeping the survey straightforward and manageable for farmers/crofters during a busy season. In the future, a recording app could also facilitate the collection of environmental data by farmers.
- Observer bias is an issue typical of surveys involving multiple observers. The data collected in the project is useful at the unit level. It helps identify specific areas of the farms that waders use during the spring, and wetland areas that can be targeted for conservation. With further training and experience, and by extending the scheme to involve more farmers, there is an opportunity to create a landscape-scale source of data on wader populations and their habitats. This links with the Working for Waders survey trial.
- The project launched later than planned because of the introduction of restrictions in the early spring as the Covid19 crisis started. This meant that the first training session happened during the lambing season and surveys started in a busy time of year for farmers. Future wader surveys should ideally be ready to start by mid-April.
- The scorecard development has involved a range of stakeholders with different perspectives, interests and expertise. Achieving a consensus is a challenge and further testing will be required during the spring to ensure it delivers its purpose. It will evolve as it gets applied and its impact are better understood. This is to be expected, as the experience of results-based projects elsewhere has shown.
- The unanticipated need to provide training and run events online has given an opportunity to trial the approach. The benefits include better engagement in particular with land managers in remote areas, efficiency – events can be run in a shorter time and no travel is required, and a lower cost. The final webinar also brought a range of speakers who wouldn't have been able to travel to Shetland. There are however barriers to address, such as the poor or lack of connectivity in some areas or use of technology by some farmers. Training events in the field for wildlife monitoring should remain an option in the future. Participants also missed the opportunity to network and socialise. The loss of the social benefits of face-to-face farming events needs to be considered.

7.2 Impacts

Environmental impacts

- By carrying out monitoring of wader and habitats themselves, participants are now more aware of birds' presence and behaviour on their own land, and more confident in bird and plant identification. They are equipped to advocate for land management for waders within the agricultural community and are more likely to engage in biodiversity conservation. Feedback showed that they enjoyed bird and plant surveys and could fit them around agricultural work.
- The wader grassland scorecard measures the quality of habitat for breeding waders. It has the potential to be used as a simple standard for collecting habitat data across the landscape. This could improve understanding of issues affecting breeding waders and allow targeting management activities to improve conditions for them. Further development should focus on trialling the scorecard in the field with land managers and adjusting it to ensure it effectively support improvement in the quality of wader grasslands.
- The project has produced a wader habitat management guide for farmers and crofters. It has been designed to generate interest in waders and raise awareness of the need for land management practices that support them. It has been distributed widely in the Shetland agricultural community at the end of the project. The objective is for it to influence practices for the benefit of waders across the landscape using land managers' skills, judgment and local knowledge.
- Wader conservation is highly dependent on farmland management. Involving farmers and crofters in monitoring waders is a way to bring attention to their role in maintaining habitats in good condition.

Communications about the project to a farming audience, such as the Landwise section in The Shetland Times, was also an opportunity to raise awareness of the importance of farming for biodiversity and increase support for High Nature Value farming.

- The online public event at the end of the project brought to Shetland speakers from other areas to share experiences and initiatives to inspire the agricultural community and increase visibility of the project, for example within the Working for Waders partnership.
- The experience of the project can now be built on to address a wider range of farmland conservation issues, including peatland and arable land for seed-eating birds. A priority will be to maintain involvement of project participants in further biodiversity monitoring, such as the farmer surveys trialled by Working for Waders.
- As a result of their observations, several participants have expressed an interest in improving their land for the benefit of waders, e.g. by creating new wader scrapes or delaying grazing in the spring.
- Some participants have been working to protect wildlife on their land for a long time, and thrive to maintain a balance with agricultural production. Their experiences and expertise are valuable, and future projects could give them an opportunity to share them with a wider audience.

Social impacts

- When asked about the project, all participants reported that getting out to monitor wildlife on their crofts and gaining knowledge of the species using their land had been an enjoyable experience. They said they would like to carry out biodiversity surveys on their land again and would encourage others to do so too. Taking part in a small project along with like-minded people and 1:1 input was also cited as a positive aspect of the project, although social interactions in the field and at events had to be cut down due to Covid19 restrictions. A WhatsApp group was used and allowed some participants to exchange questions and share sightings and feel part of a small community. Not all used the app though. As an unexpected positive outcome, home-schooled children were also able to take part in the surveys and some used them for school projects.
- The project gave a chance to farmers and crofters to show their interest in biodiversity, their willingness to integrate its conservation in their farm management planning and the positive impact of their practices on the environment. The good number of applications received, and the diversity of applicants showed a high level of interest in the approach. Selected participants cited an interest in wildlife as their main motivation for taking part. They spoke of a moral duty to look after the land in a way that benefits nature, as well as the personal reward for doing so: 'good for the soul'. Other reasons for signing up included the learning opportunity, and an interest in finding out how to help wildlife on their own land.
- The lack of understanding in the general public of the community benefits and value of nature-friendly farming was raised as an issue by some participants. Communications through the lifetime of the project tried to increase recognition from the public of farmers' role in biodiversity conservation. The project legacy page on the SLMG website will continue to promote this message.
- The project relied on co-operation between agricultural and conservation sectors and has helped build connections. In the long-term this is a key element of success of results-based scheme projects.

Economic impacts

- The purpose of the wader grassland scorecard is to be a tool that measures rigorously the quality of habitat for breeding waders. The project has produced a first version that introduces the concept and provides a basis that can be built on. If adopted by stakeholders, it could provide land managers with quantifiable evidence of the environmental value of their land for waders. Financial support for the delivery of public goods could be targeted in a fair way to those areas that are achieving proven environmental benefits and encourage positive changes in suitable sites in sub-optimal condition.
- Project participants received funding for carrying out biodiversity surveys. This was to recognise and highlight the value and labour cost associated with responsible biodiversity monitoring and management, and skills required.
- The project sought to increase understanding of the value of biodiversity as a natural capital asset for farmers and crofters. Overall, biodiversity was already valued by participants and saw wildlife as an asset on their farm. Financial support can help farmers protect and manage their land for nature and find a balance between food production and biodiversity. The question of the effects of funding schemes was raised and a need for careful targeting was highlighted.

8. COMMUNICATION & ENGAGEMENT

Detail throughout the project's lifetime

- The Shetland ParkLife [YouTube channel](#) was created at the start of the project. It hosts a promotional video, a wader identification video and interviews with participants at the end of the project. The webinar recordings are also being uploaded.
- Communications

Date	Media	Format	Title and link
10/04/2020	The Shetland Times	Online news, print	Project aims to help wading bird populations
10/04/2020	Shetland News	Online news	New project encourages farmers and crofters to look after waders
07/08/2020	Landwise, The Shetland Times	Print	Interest renewed in wading birds (copy in Annexe 4)
06/08/2020	BBC Radio Shetland	Radio	Good Evening Shetland (starts @25')
August 2020	The Crofter, Scottish Crofting Federation magazine	Print and online (pdf)	Refocusing rural support (p13-15)
Winter 2020	Scotland News, RSPB Scotland magazine	Print	Farmers and crofters record farmland wildlife in Shetland (copy in Annexe 4)
18/11/2020	The Shetland Times	Online news	Online event to celebrate nature-friendly farming
21/11/2020	Landwise, The Shetland Times	Print	ParkLife supported wading birds (copy in annexe 4)

- The Shetland Agri-Environment Group Facebook group has been used to share updates (67 members to date).
- 1000 hard copies of the 'Farmland Waders in Shetland – A best practice guide for farmers and crofters' leaflet have been printed. Over 500 have been sent to SLMG members and contacts in Shetland. The remaining stock is available to share with any interested party within and outside Shetland. This information has been passed on to the Working for Waders partnership and Nature Friendly Farming Network.
- A 2-hour public online webinar on 21 November, was organised with support from RSPB's Events team. Speakers were:
 - Phil Knott, Vice Chair of the Scottish Steering Group of the Nature Friendly Farming Network
 - David Finlay, The Ethical Dairy, Dumfries and Galloway - An agro-ecological farming journey
 - Derek McLoughlin, Project Manager and Colm Gavin, Farmer - Results-based approach and farmer's experience in the Pearl Mussel Project in Ireland
 - Nathalie Pion, RSPB Conservation Advisor - ParkLife project with farmer interviews video
 - Donal Sheehan, dairy farmer in Co. Cork and Project Manager of The BRIDE (Biodiversity Regeneration In a Dairying Environment) Project
 - Mark Wilson, Senior Research Ecologist, BTO Scotland - Working for Waders, Understanding of farmland waders and management for them
 - Helen Keep, Senior Farm Conservation Officer, Yorkshire Dales National Park - Results-based agri-environment payment scheme for waders
 - Kirsten Brewster, NatureScot Agriculture Policy Advisor - Piloting an Outcomes Based Approach in Scotland (POBAS) project
- FAS Engagement: n/a
- EIP-AGRI: n/a

9. KEY FINDINGS & RECOMMENDATIONS

9.1 Key findings

Farmer engagement in environmental monitoring

A small group of farmers/crofters collected a series of environmental data on their land. Their feedback indicates that there is a place for integrating biodiversity monitoring with farm management practices.

Most participants were already interested in nature conservation. Recording biodiversity data has increased their awareness of bird activity on their land, and of specific aspects of land management and habitat condition that affect them. As a result, they are more confident in their knowledge of the wildlife on their land.

Biodiversity as an output of farming

The project sought to initiate a shift in farmers' perspective towards biodiversity and turn environmental outcomes into key products of land management activities. Farmers' skills are essential to the delivery of these outcomes.

Increasing farmers' awareness and knowledge of the needs of species and habitats associated with agriculture is a first step towards producing positive results for biodiversity. Owning ecological knowledge of species and habitats can give farmers the resources to deliver biodiversity conservation in the long-term.

The habitat scoring system is designed to be a tool that farmers and crofters can use to guide land management activities. Once finalised, land managers could use the scores as evidence of the environmental outcomes they deliver.

Stakeholder co-operation for landscape-scale conservation

The project has strengthened connections and built trust between farmers/crofters and conservation sector in Shetland. Collaboration is necessary to secure biodiversity conservation on farmland.

9.2 Recommendations

The pilot project has shown that there is an interest in the agricultural community in taking part in biodiversity monitoring on farmland, and that participation increases local knowledge of wildlife.

- A monitoring scheme and recording tools to encourage further participation of farmers in monitoring of biodiversity on their land could be developed.

Habitat scorecards can be valuable tools to facilitate communication between agricultural and conservation stakeholders and provide a clear pathway to guide land management activities for the benefit of biodiversity.

- The Shetland wader habitat scorecard created in the project needs to be fine-tuned by testing it in the field with land managers during the spring, to ensure it can effectively drive an improvement in wader habitats. Further work is required for it to be adopted and used by land managers. Training of users will also be essential.
- Other scorecards could be developed to support the delivery of a range of environmental outcomes on farmland, in Shetland and elsewhere in Scotland.
- Agri-environment funding should be targeted to support practices that lead to an increase in habitat scores.

Out of necessity, engagement with project participants has relied on online meetings and videos.

- There is an opportunity to improve provision of online training and events for a farming audience, to increase inclusivity and accessibility in remote areas and share knowledge and resources between geographic areas with similar constraints and opportunities.

10. CONCLUSION

The ParkLife project has provided an opportunity to trial farmer participation in the monitoring of the impact of land management practices on breeding waders. Ten participants have surveyed waders and habitats on their land during the breeding season. Despite Covid19 restrictions preventing the delivery of training in the field and limiting social interactions between farmers and project staff, engagement in the project has been maintained throughout the survey season, and the data collected is valuable. More importantly, participants have shown a great interest in learning about biodiversity on their land and managing it to support wildlife.

Beyond the project, the wader habitat scorecard produced will be further developed and promoted to make it a useful tool that farmers and crofters across Shetland could adopt as a guide to improve management practices to benefit waders. Driving scores upwards will rely on the implementation of an outcome-based agri-environment scheme. Understanding and monitoring of biodiversity targets by farmers to underpin land management practices will be essential.

ANNEXES

1 Participant interview questions

Each of the 10 participants were interviewed by phone by SLMG project co-ordinator at the start and end of the project.

Initial interview

- 1. Who is going to carry out the surveys?**
- 2. What age group do you belong to?**
- 3. Do you farm full-time or part-time?**
- 4. Can you describe your farm or croft?**
- 5. What is your experience of agri-environment schemes?**
 - a. Which schemes have you participated in?
 - b. What were your motivations to apply?
 - c. If you are not in AECS now, why not?
 - d. In the schemes you have been in:
 - What have you valued most?
 - What have you disliked most?
 - e. Have you heard of outcome or results-based agri-environment schemes?
- 6. Awareness of inbye waders**
 - a. Do you know which birds we mean by 'inbye waders'?
 - b. Do you feel you can recognise them?
 - c. Do you know which ones come on your land?
 - d. Do you know what they are looking for or need on farms and croft?
 - e. Do you know what the main threats to waders are, in Shetland and more widely?
- 7. List five words you would most associate with land management in Shetland**
- 8. List five words that come to mind when you think about land management in Shetland in 20 years**
- 9. How much do you agree with the following statements?**

Strongly disagree / Slightly disagree / Neither agree or disagree / Slightly agree / Strongly agree

Farming and crofting are important to wildlife and the environment

It is difficult for farming and wildlife to exist together if you want to run a profitable farm

Wildlife is a valuable asset on my farm or croft
- 10. What would help you improve the management of your land for the benefit of wildlife?**

Final interview

1. About the project

- a. What have you liked most about the project?
- b. What could have been done better or differently?
- c. As a consequence of Covid-19 restrictions, we have had to introduce remote meetings and support and online and written training materials instead of face-to-face meetings and field training.
 - Has this been an issue for you? What barriers have you faced?
 - Has it been sufficient to make you feel confident in carrying out the surveys? Is there something that could have helped you more?
 - Can you see any benefits in remote engagement in the future? Do you have any suggestions on how we could improve?

11. About the surveys

- a. What have you liked about taking part in the surveys?
- b. What have you found challenging?
- c. Did you have enough time to complete the surveys during the spring?
- d. What have you learnt from doing the surveys?
- e. Will you carry out biodiversity surveys on your land again?
- f. Would you recommend other crofters/farmers to take part in similar surveys?

12. Awareness of inbye waders

- a. Do you know which birds we mean by 'inbye waders'?
- b. Do you feel you can recognise them?
- c. Do you know which ones come on your land?
- d. Do you know what they are looking for or need on farms and croft?
- e. Do you know what the main threats to waders are, in Shetland and more widely?

13. Has your participation in the project motivated you to make changes in the way you manage your land?

2. What would help you improve the management of your land for the benefit of wildlife?

3. List five words you would most associate with land management in Shetland now

4. List five words that come to mind when you think about land management in Shetland 20 years in the future

5. What are your thoughts on the following statements?

Farming and crofting are important to wildlife and the environment.

It is difficult for farming and wildlife to exist together if you want to run a profitable farm.

Wildlife is a valuable asset on my farm or croft.

Farmers and crofters should be financially supported to protect and manage wildlife on their land.

- Plants

Plant Recording Sheet

Farm/croft name:
Surveyor:

Field:

Date:

Species	1	2	3	4	5	6	7	8	9	10	Other
Bird's-foot trefoil											
Bogbean											
Cuckooflower											
Dandelion, cat's-ear, hawkbit											
Devil's-bit scabious											
Eyebrights											
Lesser spearwort											
Lousewort – common and marsh											
Marsh cinquefoil											
Marsh marigold											
Marsh pennywort											
Marsh willowherb											
Meadowsweet											
Orchids											
Plantain - all species											
Ragged robin											
Red clover											
Selfheal											
Sheep's bit											
Small bedstraws											
Sorrel - common and sheep											
Thrift / Sea pink											
Tormentil											
White clover											
Yellow flag iris / Seggi-floer											
Yellow rattle											
Cotton-grass											
Other sedges											
Small rushes: wood, heath, spike rushes											
Soft rush											
Heathers											
Mosses and Sphagnum											
Docks											
Nettle											
Thistles											
Sown grasses (e.g. rye grass)											

Crop:

Trees/shrubs adjacent to field

Notes

3 Monitoring reports

List of documents sent to each participant at the end of the project

Summary map of wader surveys

Plant surveys

- Map of species diversity: number of species-rich grassland and wetland indicators
- List of indicator species

Habitat survey maps

- Vegetation height
- Vegetation density
- Soil wetness

Maps of soil survey results

- pH
- Organic matter
- Worm count per 20x20 cm pit (5 pits in each field in a W pattern, the points are randomly placed on the map)
- Compaction at 8 cm deep (5 survey points in a W pattern, the points are randomly placed on the map)

Examples are provided below.

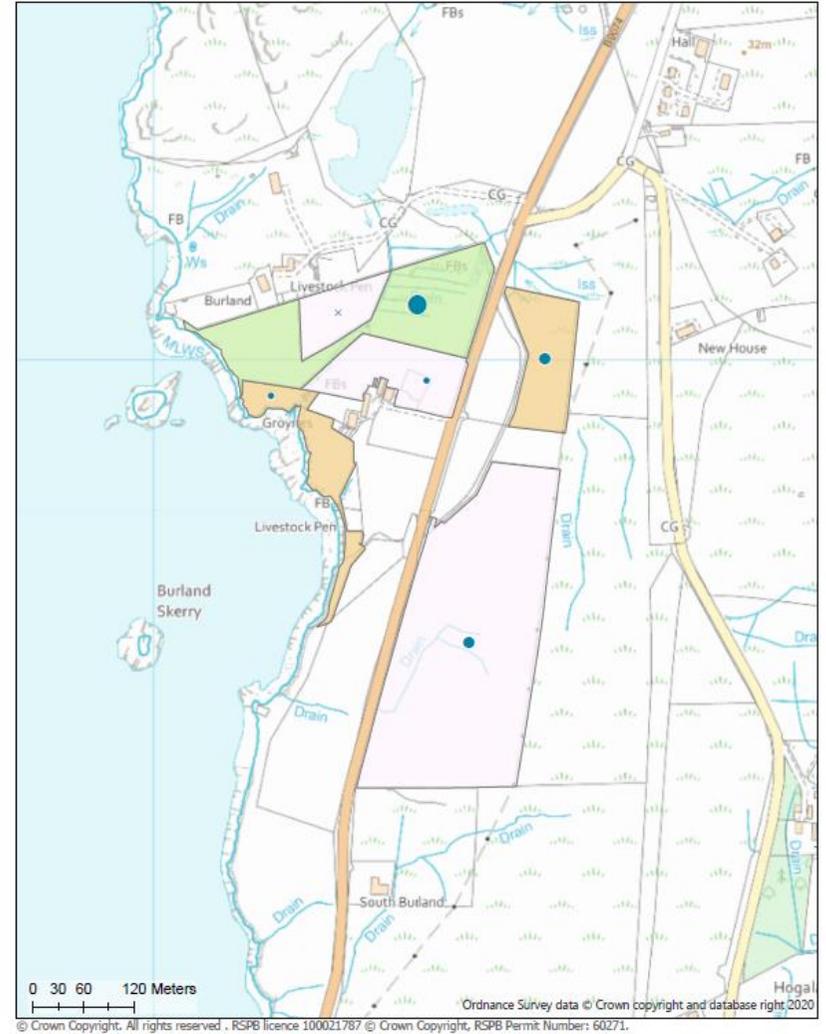
Waders - Summary 2020



- | | | | | |
|--------------------|-----------------|-----------------|-----------------|----------------------|
| Territories | Nests | Chicks | Feeding | ✕ No waders recorded |
| ● Curlew | ○ Curlew | ☆ Curlew | ✱ Curlew | □ Survey area |
| ● Lapwing | ○ Lapwing | ☆ Lapwing | ✱ Lapwing | |
| ● Oystercatcher | ○ Oystercatcher | ☆ Oystercatcher | ✱ Oystercatcher | |
| ● Redshank | ○ Redshank | ☆ Redshank | ✱ Redshank | |
| ● Snipe | ○ Snipe | ☆ Snipe | ✱ Snipe | |



Plant diversity

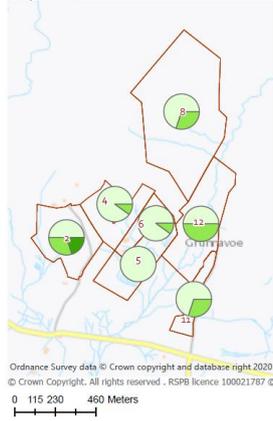


- | | |
|--------------------------|--|
| Number of species | Species-rich grassland indicators |
| Wetland indicators | 0-5 |
| ✕ 0 | 6-10 |
| ● 1-4 | 11-15 |
| ● 5-8 | 16-20 |
| ● 9-12 | >20 |



Vegetation height

Early season

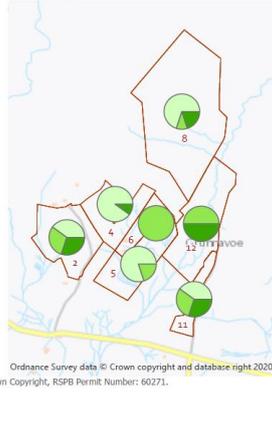


Proportion of survey points

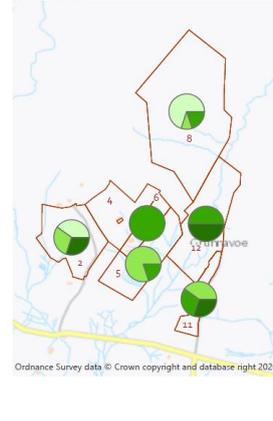
Vegetation height (cm) Habitat survey areas



Mid season

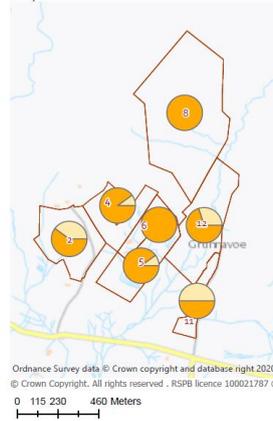


Late season



Vegetation density

Early season

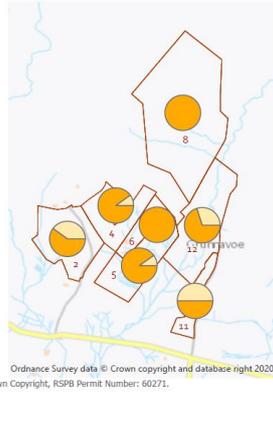


Proportion of survey points

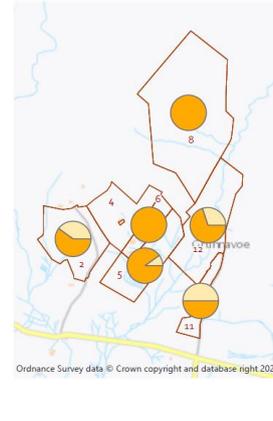
Vegetation density



Mid season

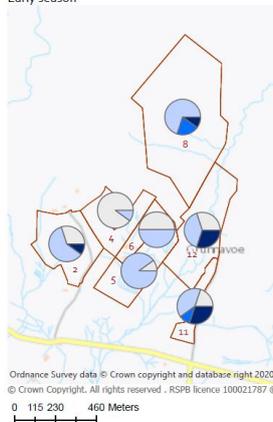


Late season



Soil wetness

Early season

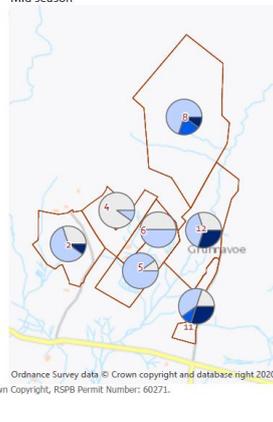


Proportion of survey points

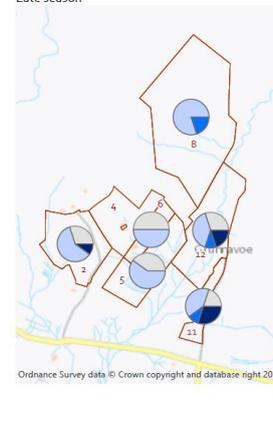
Soil wetness Habitat survey areas



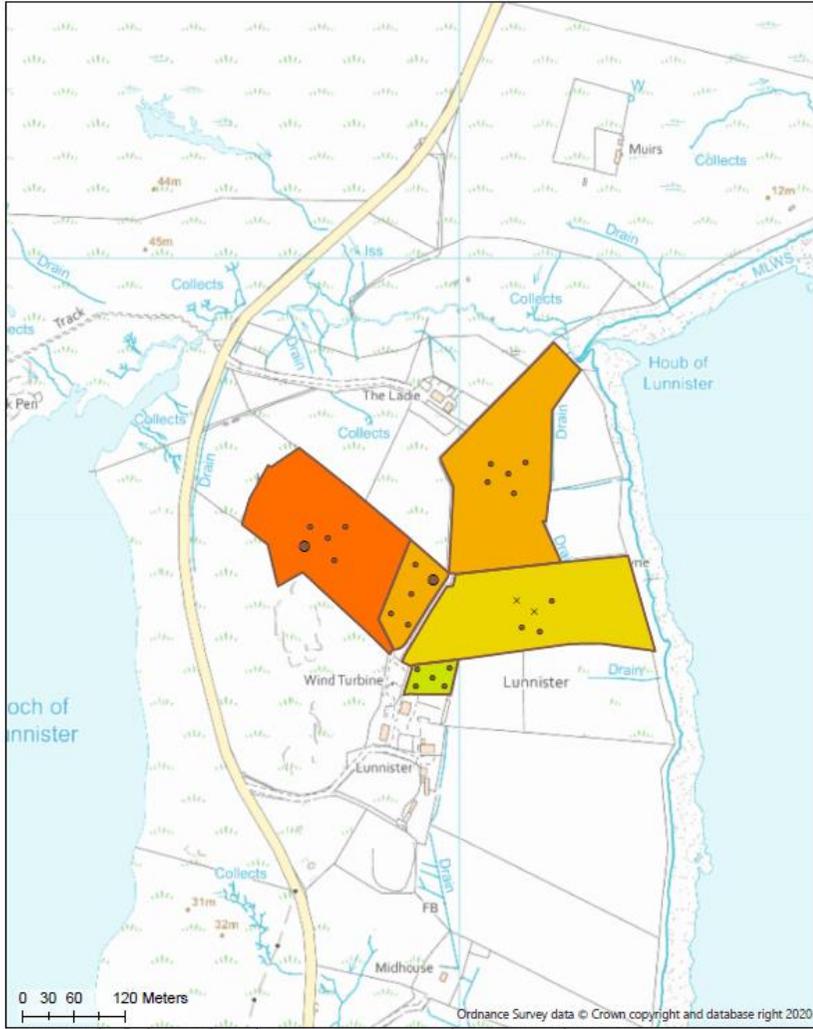
Mid season



Late season



Soil surveys

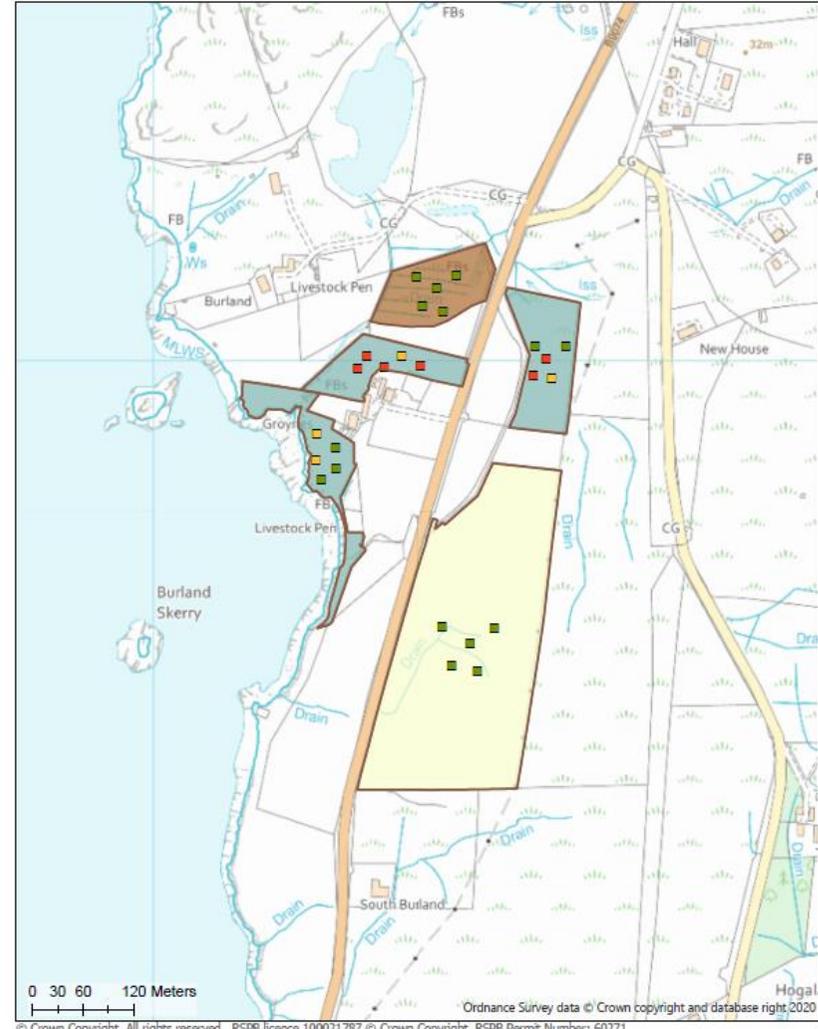


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pH	Worm count per pit	Soil survey area
4.6-5.0	× 0	[Orange shaded area]
5.1-5.5	• 1-5	[Yellow shaded area]
5.6-6.0	● 6-10	[Light green shaded area]
6.6-7.0		[White unshaded area]



Soil surveys



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Organic matter (%)	Compaction at 8 cm - 5 survey points	Soil survey area
0-10	× bedrock	[Brown shaded area]
10-20	● low	[Dark green shaded area]
20-30	■ medium	[Light green shaded area]
30-40	■ high	[White unshaded area]
40-50		



4 Project communications



Interest renewed in wading birds

BY RYAN TAYLOR

Interest in wading birds is being renewed in Shetland, with over 20,000 to be surveyed this year.

The 10-month ParkLife project was announced in July of last year, involving a number of local organisations and crofters.

Shetland is home to high numbers of waders, such as snipe, oystercatchers, and curlews. These birds are important to the local economy and environment.

They are also a vital part of the local food chain, providing a source of protein for other birds and animals.

The project is being led by the Shetland Crofters' Association, in partnership with the RSPB Scotland and the Shetland Wildlife Society.

They have set up a network of wading bird sites across the islands, with the aim of monitoring their numbers and habitats.

As part of the project, crofters are encouraged to record sightings of wading birds on their land, and to take steps to improve their habitats.

"It's been exciting to see the interest in wading birds renewed in Shetland," said Ryan Taylor. "We hope this project will help to ensure that these birds continue to thrive on our islands for many years to come."

The Shetland Times, 7 July 2020



CONSERVATION Crofters and farmers record farmland wildlife in Shetland

A group of 10 farmers and crofters in Shetland monitored farmland wading birds on their land during the 2020 breeding season. It was part of a 10-month pilot ParkLife project, funded by the Knowledge Transfer and Innovation Fund, and led by Shetland Livestock Marketing Group with RSPB Scotland providing monitoring support.

The group collected valuable information on the birds' activity to help identify which agricultural practices benefit them most, contributing to a new results-based agri-environment scheme. During lockdown, the younger generation learning from home took part in the surveys for school projects.

Duncan Gray, a crofter in Unst, said, "I've enjoyed monitoring the birds on morning walks. We have a pair of lapwings with chicks. There are redshanks near the burn. We hear the snipe and there are also curlews and of course shelders [oystercatchers]."

Scotland News, RSPB Scotland, Winter 2020



Parklife supported isles' wading birds

The Shetland Agri-Environment Centre brought in ParkLife project to end with a public online event in Shetland.

A range of speakers gathered around a virtual-friendly farming theme shared their experience across two one-hour sessions.

RSPB Scotland conservation adviser in Shetland Natalie Poon joined the project.

Coordinated by the Shetland Livestock Marketing Group (SLMG), the 10-month partnership supported a group of farmers and crofters to survey farmland waders and their habitats during the spring.

Their efforts are contributing to the information that could support the development of results-based schemes in Shetland.

The event, a key objective and was streamlined by the Scottish Farming Group of the Nature Friendly Farming Network (NFFN), introduced the representative and gave an overview of its plans for supporting farmers and crofters across Scotland.

David Gray, who shared his details about his family farm at Dunfries and Galloway, which has shifted from intensive to organic dairy. He has focused on improving the health of grasslands and livestock, and significantly reduced inputs to gradually achieve both environmental and financial gains.

Denis McLaughlin and Colin Cowie joined from

County Mayo. Ireland is the leader in the development of results-based programmes in Europe.

Mr McLaughlin has worked on a range of results-based schemes and explained the basics of such programmes. Mr Cowie, a farmer, gave his insight as a participant in the Peat Mireland Project.

Farmers are rewarded for the quality of habitats they manage in the countryside of their unimproved crofts.

Mr Cowie shared a map of his land, showing his 12-acre croft, and explained how he had installed soil traps to prevent sediment from his drains and improve water quality in the river.

Laura, Donald Sheridan, a dairy farmer in County Cork, is the lead and project manager of the Breda Project – and the benefits of this experience.

The project has made progress for maintaining habitats but will also be the Breda Bank catchment. It captured 600,000 litres of water in the 1990s and then, since 2010, and again in Shetland to follow a different route while birds are still common.

Mark Wilson, senior research ecologist with the British Trust for Ornithology (BTO), shared about Working for Waders. The research partnership aims to encourage and support people at taking positive action for breeding waders. He drew attention to a



A lapwing on her nest.

farm survey that was trailed during the spring and he encouraged crofters in Shetland to get involved next season.

Helen Kepp, senior farm conservation officer at the Yorkshire Dales National Park Authority, presented the National Park's payment-by-result pilot, that has funded farmers for the quality of wader habitats and meadows.

Finally, Kirsten Brewster from NatureScot gave a summary of initial discussions with farmer groups in

the Piloting an Outcomes Based Approach in Scotland (POBAS) project areas.

She also explained how the next phase will trial the approach on the ground.

As public gatherings are currently impossible, the event was an opportunity to bring to Shetland – often virtually – solutions to shared challenges that we can learn from and initiatives that can be engaged with.

The webinars have been recorded and will be available on the Shetland ParkLife YouTube channel.

The Shetland Times, 27 November 2020