

## The conservation of Scottish Machair: a new approach addressing multiple threats simultaneously, in partnership with crofters

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### ABSTRACT

Scottish machair is a unique cultural, agricultural and conservation resource that is dependent on active management by crofters and farmers operating low intensity livestock systems. Socioeconomic changes threaten its future, and so that of the associated ecological community including species of high conservation priority. The Scottish Rural Development Programme (SRDP) includes measures for machair but extensive consultations identified significant gaps and shortfalls in this mechanism for securing machair conservation. Direct input of new finance is needed to: assist and facilitate positive crofting management; promote best practice; and develop future agri-environment programmes that secure beneficial machair agricultural management in the longer term.

Over the past two years, The Royal Society for the Protection of Birds Scotland (RSPB Scotland) developed a successful bid for LIFE+ funding from the EU for a machair conservation project in the years leading to the next SRDP (2010 – 2014). The proposal has been awarded over £1 million in LIFE+ funding. As this paper is submitted for publication, negotiations are underway between RSPB Scotland, Scottish Natural Heritage and Comhairle nan Eilean Siar to secure the remaining 50% funding required to undertake the project.

### INTRODUCTION

Presentations at this conference, and wider recent discussions, have highlighted several key issues relating to Scottish machair, including:

- Its high biodiversity value, particularly with respect to species and assemblages disappearing or lost from comparable areas in Europe.
- The rarity and singular nature of the habitat, particularly the globally unique Uist arable machairs.
- The insular, isolated nature of many of the important wildlife populations dependent on machair, and consequent elevated extinction risks.
- The emergence of multiple threats to this biodiversity.
- The central role that crofting agricultural systems play in generating and maintaining this

biodiversity and the intimate, longstanding connections between island culture, crofting and machair. Effective conservation of machair will only succeed if it supports local agricultural systems, with crofters and farmers in a central role in developing actions and delivering management.

- The socio-economic changes that are underway will increasingly affect crofting practices and patterns of machair management.
- A high proportion of designated machair sites are in unfavourable conservation status: around 70% of the machair Special Area for Conservation (SAC) area (14% of the global resource) is in unfavourable condition, nearly all of this 'declining'.
- Increasing impacts of resident greylag geese (*Anser anser*) are a cause of considerable concern among crofters and farmers.
- There is a widespread perception that agri-environment schemes in Scotland currently operate under a funding shortfall.

With these issues in mind, RSPB Scotland has for the past two years, in consultation and partnership with numerous individuals and organisations, been leading the development of a project proposal in the shape of a bid for funding under the EU LIFE+ Nature scheme.

The final proposal was submitted in December 2008, in partnership with the statutory conservation agency Scottish Natural Heritage (SNH) and Comhairle nan Eilean Siar (CnES), the Western Isles local authority, and with support of the Scottish Crofting Foundation a range of crofters and stakeholders. The bid was for a 4-year, multi-disciplinary project for the conservation of Scottish machair, costing just over £2 million in total.

The partnership learned in August 2009 that the bid for EU funding has been successful, with 50% (the maximum available, over £1 million) of project funding being awarded by the European Commission via LIFE+. Following negotiations, a co-financing agreement between SNH, CnES and RSPB Scotland has recently been secured. The required funding package is now in place and work on the Conserving Scottish Machair LIFE+ Project will begin in January 2010.

## THE PROJECT

Scottish Machair is listed on Annex 1 of the EU “Habitats Directive”, being a high biodiversity value habitat occurring over a total global area of approximately 19,000 ha, with 70% of this in western Scotland, mostly on the offshore islands (the remainder in western Ireland). This listing makes it a primary consideration for EU environmental policy and qualifies machair conservation for funding under the EU LIFE+ Nature scheme.

Projects bidding for LIFE+ Nature funding must meet several specific conditions before being considered eligible, including the following:

- Projects should contribute to the implementation of the Birds and Habitats Directives and support the further development and implementation of the Natura 2000 network of sites designated under EU law (Special Protection Areas, SPAs, and Special Areas for Conservation, SACs);
- Projects should focus on long-term, sustainable investments in Natura 2000 sites and the conservation of species and habitats targeted by the Directives;
- Projects must have strong ‘best practice’ or ‘demonstration’ elements;
- They must include a large element of ‘concrete conservation actions’;
- LIFE+ does not fund research projects;
- Actions must be complementary to actions that can be financed from other EC funds, notably mainstream land management funding, in Scotland under the SRDP.
- Projects should deliver ‘added European value’.

During two six-month full-time secondment periods during 2007 and 2008, a RSPB Scotland Project Development Officer (IM), funded by SNH, conducted formal and informal consultations with crofters, farmers, relevant organisations, academics, civil servants and agency staff. The aim was: to identify the principal threats to machair habitats, to construct objectives in relation to these, and use these to develop a project proposal that simultaneously fulfils the conservation needs of Scottish machair; the practical agricultural requirements of the people who manage it; and the strict conditions of the LIFE+ Nature scheme outlined above.

The result was identification of the following project objectives, actions and outputs summarised below.

## OVERALL PROJECT PURPOSE

To secure and improve the conservation status of 70% of the world’s machair habitat and its associated species by implementing and demonstrating sustainable management methods that optimise the conservation interest and are compatible with local agricultural practices.

Specifically, the project will target machair habitat on three SACs and will secure the conservation of

associated bird species in 10 machair SPAs - this covers a total area of 23,766 ha (Fig.1). The project will bring 3,200 ha of machair habitat into favourable condition and improve the conservation status of the Annex 1 species corncrake (*Crex crex*) and chough (*Pyrrhocorax pyrrhocorax*), and the regularly occurring migratory species dunlin (*Calidris alpina*) and ringed plover (*Charadrius hiaticula*).

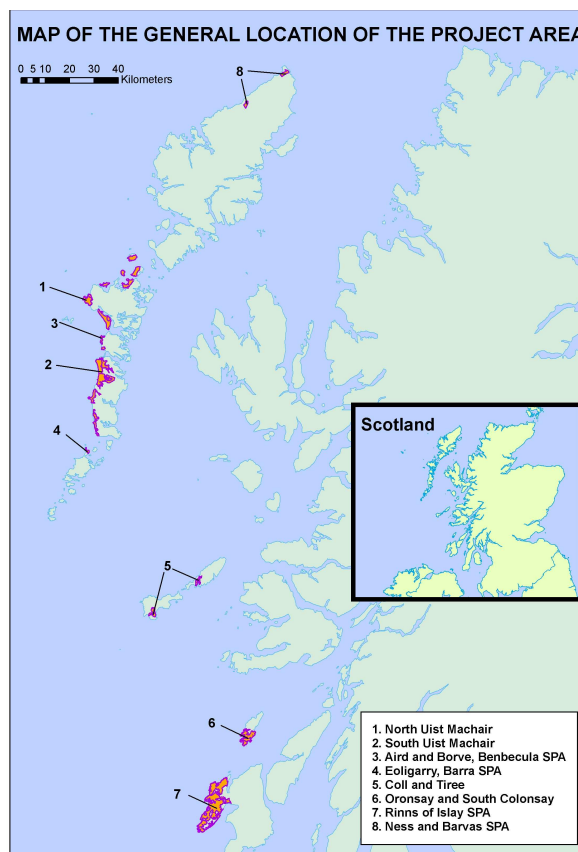


Fig. 1. Map of the project area.

The principal mechanisms that will be employed are:

- **Direct undertaking of agricultural management** beneficial to wildlife and economically sustainable, either by providing additional financial support to crofters; employing contractors as appropriate; deploying project staff and machinery directly.
- **Coordination, facilitation and demonstration** of sustainable agricultural methods to the crofting community, advisors and policy makers.
- **Provision of skills training, machinery, labour and advice** to assist with conservation management.
- **Boosting and extending the two local greylag goose management schemes** to assist the implementation of beneficial management practices.
- **Enhanced and extended monitoring and information gathering** within the project area to evaluate the effects of the management practices implemented on target biodiversity, and to identify any blockages that hinder the achievement of conservation objectives.

- **Development of bespoke agri-environment measures** for inclusion in next SRDP to bolster the longer-term sustainability of extensive agricultural systems on Scotland's machair.
- **Development of community-led machinery ring** to provide additional capacity and flexibility to crofters and farmers.

### **SPECIFIC PROJECT OBJECTIVES**

#### **Objective 1 – Expand the area of late harvested crop on arable machairs.**

Earlier harvesting of arable crops is a threat to arable and fallow weed communities on machair habitats. The project will aim to alleviate some of the pressures that lead to early harvest and mitigate any negative effects of later harvesting.

- **Actions and means involved:** The project will build capacity among the crofting community to provide the additional resources needed during the busy harvest period to encourage an expansion in late harvested crop. The project will increase funding for the local greylag goose management schemes to reduce the threat posed by geese to late standing crops. The project will fully monitor and evaluate the effects of these actions.
- **Expected results:** An increase in the area of late harvested arable crop on cultivated machairs in Uist and Benbecula. Harvesting dates will ensure that arable weed communities have set seed. Demonstration of these techniques to crofting communities and the costs, technical and biodiversity implications fully evaluated.

#### **Objective 2 – Effect a reduction in the area of under-sown arable crop.**

Under-sowing areas of arable crop with grass seed reduces the biodiversity of arable weed communities in crop and fallow years. This may also have a negative effect on nesting habitat of wader species. The project aims to promote a better understanding of the fundamental connections between thriving machair communities and good environmental condition of machair habitats with a view to promoting a more holistic approach to management.

- **Actions and means involved:** The project will seek an increase in arable winter fodder production on machair to compensate for lower quality grazing on natural fallows. Additional areas of machair will be cropped and where appropriate, in-bye fields will be used for grass fodder production. Through a process of collaboration, this fodder will be made available to crofters who do not under-sow crops on arable machair SACs. Skills training, machinery and labour will be made available where these are the limiting factors for either traditional arable cultivation or additional fodder production.
- **Expected results:** A reduction in the area of under-sown crop on key arable machair sites on SACs. Raised awareness of the biodiversity benefits of arable fallows in the machair system. An expansion by 15 ha in the area of cropped machair

in the Uists and Benbecula. Collaboration between managers of arable machair and grassland machair sites.

#### **Objective 3 – Undertake best practice arable crop production including cultivation techniques and demonstrate these to the crofting community.**

Machair crofting is increasingly carried out using large, modern machinery and the most cost effective techniques, with contractors carrying out an ever-increasing amount of land management. However, certain practices may not deliver the same conservation benefits as traditional methods. Without clear demonstration of the benefits of more sensitive techniques, these technical advances and modern practices may severely affect the conservation interest on machair SACs and SPAs.

- **Actions and means involved:** The project will identify a range of arable crop production techniques that are more suited to conservation management yet still deliver local agricultural requirements. The project will provide suitable agricultural machinery to allow beneficial management practices to be undertaken on key machair sites. The project will demonstrate and promote these practices to the wider crofting community, to key stakeholders in the agricultural and conservation sectors and to relevant government agencies.
- **Expected results:** Demonstration of techniques to at least 50% of active crofters and to all major crofting contractors on the Uists and Benbecula. Implementation and monitoring of appropriate techniques on 60 ha of machair habitat on machair SACs. The availability of fully evaluated and costed agri-environment scheme measures for consideration during development of future Rural Development Programmes.

#### **Objective 4 – Establish best practice in-bye management as part of a whole crofting unit machair biodiversity package**

The Annex 1 species corncrake uses in-bye grassland fields for breeding. With sensitive management planning, these in-bye areas could continue to provide corncrake benefits while providing additional locally grown fodder for crofting communities.

- **Actions and means involved:** The project will work with crofters to ensure the availability of sustainably produced grass silage as over-winter fodder. This will be used to offset the winter livestock feed requirements of those crofters who do not under-sow their arable crops. A collaborative approach to machair management will be facilitated between crofters and farmers with different types of holding. On Tiree, the project will seek to re-introduce arable crops into in-bye field rotations to give late cover for corncrakes when adjacent grass fields are cut. The project will run a greylag goose management scheme on Coll & Tiree to give crofters greater flexibility in in-bye management.

- Expected results: More sustainable in-bye management with grass silage output linked to the wider machair crofting system. Secure corncrake management on corncrake SPAs in the project area. Demonstration of beneficial collaborative management to the crofting community.

**Objective 5 – Identify constraints to active management and increase the capacity to undertake beneficial management in crofting and farming communities on designated sites.**

Socio-economic factors are largely responsible for limitations in the availability of labour and appropriate machinery to undertake the beneficial management practices required on designated sites. This has led to more reliance on contractors and less flexibility in management practices and the timing of management.

- Actions and means involved: The project will develop, demonstrate and promote conservation management techniques that best suit the circumstances in today's crofting communities. The project will work with these communities to establish the critical blockages that prevent management that is appropriate for biodiversity outcomes. The project will provide machinery and training to give additional flexibility and expand opportunities for individual crofters to undertake management.
- Expected results: better understanding of the drivers of change in crofting communities and full evaluation of the practices and incentives necessary to maintain High Nature Value farming on these Natura sites.

**Objective 6 – Expand the skills and knowledge base and support the RDP to deliver better management of designated sites by crofting and farming communities.**

There is a very real risk that current economic pressures, combined with changes in market demand as a result of the Common Agricultural Policy (CAP) reform, will further increase the speed at which agricultural practises will change on machair habitats. A lack of new entrants to agriculture combined with an increased average age among land users adds to current pressures on available labour. However, unless communities continue to use their natural environment as a means of levering additional agricultural support there is a very real danger that the environmental benefits from previous agri environment schemes will be lost.

- Actions and means involved: This project will work with crofting and farming communities to build a skills capacity through workshops, the provision of guidance material on best-practice management and by demonstrating key skills. The project will work with Scottish Government to identify and develop measures and seek their inclusion in revised and subsequent Rural Development Programmes.

- Expected results: Expanded skills base, opportunities for new entrants and better understanding of best practice management methods. Raised awareness in communities of the economic and environmental benefits of the High Nature Value farming practices undertaken throughout the project area.

**Objective 7 – Secure the supply of local arable seed**

Local crop seed varieties that are able to flourish with minimal inputs ensure the continuation of a low input cereal system, which is crucial for the maintenance of the biodiversity interest of Scotland's machairs. However, recent events such as accidental damage to seed stores and extensive damage to standing seed crops by greylag geese, have highlighted the vulnerability of the seed supply.

- Actions and means involved: The project will assist with the protection of designated seed crops and will build secure storage facilities for the native seed Uist crop.
- Expected results: Weather, predator and flood proof storage facility established on Uist. Reduced risk of having to use imported seed and additional inputs. Raised awareness of the importance of local seed to the machair system.

**CONCLUSION**

The successful construction of a funding package for the Conserving Scottish Machair LIFE+ Project presents an opportunity to develop a sustainable future for Scottish machair systems that maintain a biodiversity resource of international significance. That this was achieved at a key political juncture for crofting and at a time of intense financial pressure on agencies and local authorities demonstrates a high level of commitment to the future of machair among the key organisations. Discussion and consultation with crofters and farmers indicated similar enthusiasm for progress among the communities and individuals who actually deliver machair management. Project implementation will be complex and doubtless issues will arise as the programme develops. If the positive and cooperative approach that people brought to the preliminary negotiations can be maintained, however, there is good prospect for achieving sustained, positive outcomes.

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