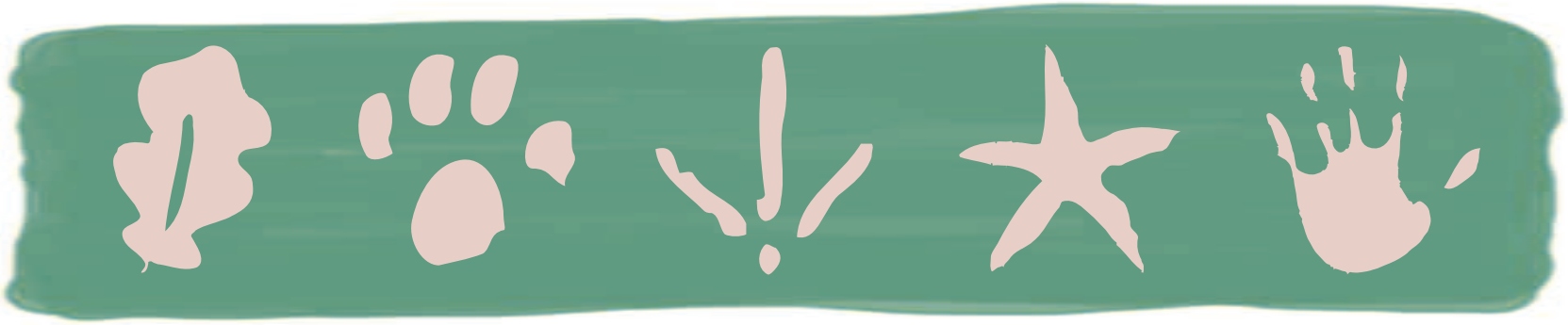
Ayrshire Biodiversity Action Plan

The Conservation and Enhancement of Ayrshire's Biodiversity

2007-2010



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A Biodiversity Action Plan for Ayrshire

Ayrshire is comprised of the three unitary authorities of East, North and South Ayrshire, including a range of islands (Arran, Greater Cumbrae, Little Cumbrae and Ailsa Craig etc). It is a cohesive bio-geographical unit from an environmental perspective as it is bounded by the sea and by watersheds. Those involved with biodiversity in Ayrshire accept that conservation requires a large scale, habitat and catchment based approach and have confirmed that the optimum area on which to base an action plan is all of Ayrshire with projects which range across the three local authority boundaries.

This Ayrshire Biodiversity Action Plan (ABAP) sets out a shared agenda for conservation action. It brings together partners across all sectors to work collectively towards a shared goal. The current Plan does not set out to encompass all of the many actions that are being carried out, or might be carried out, to support biodiversity conservation within Ayrshire. Instead it identifies those priorities that need, or would greatly benefit from, joint action, without which they might never be tackled.

In a pioneering move the ABAP Management Group have agreed to take action only on a small number of urgent conservation problems. By concentrating Ayrshire's best expertise and experience on these problems the Group believes that progress will be made which is more substantial, more effective and faster than trying to take on all the good causes that might need action. By limiting the species, habitats and core themes being pursued at any one time all of the organisations involved will be able to deliver their contribution to the joint Plan while still continuing their own conservation activities set through other criteria.

Equally original is the recognition that different problems need to be approached on different timescales. As a result this ABAP has a 'rolling programme' of projects, each operating to its own timescale including the processes of completion and renewal. Progress of each project is considered annually but those involved directly decide upon the short-term, medium-term and long-term aspects of the work. This is particularly important when large-scale changes are being considered as many of these ecological processes take a very long time to happen.

Ayrshire is a very active area with a long history of agricultural, industrial and cultural modification to the natural environment. In such a 'working' countryside this local biodiversity action plan (LBAP) will make sure that the greatest number of individuals and organisations that are able to help with the work have an opportunity to do so. This philosophy is built into every aspect of the ABAP's approach as the Plan can only succeed if the work is shared amongst as many people as possible and the principles behind it are supported by the majority of those who live and work in Ayrshire.

Since the ABAP was created in 2001 the UK, Scotland and Ayrshire have come a long way in their understanding and empathy towards our natural heritage. The work on the original Ayrshire LBAP identified what was special about the wildlife and wild places of Ayrshire and identified where many of the threats to its long-term future lay. Now this document, and the organisation behind it, takes the first steps towards sorting out the problems and finding the common sense compromises which will allow the magnificent wildlife of Ayrshire to be safe and thrive for the benefit of the people.

The approach described above will open up and move on the LBAP process with the voluntary sector, local authorities, statutory bodies, businesses and all kinds of individuals working together. We believe that from now on the ABAP will be judged by its results and with the eyes of the rest of Scotland on Ayrshire we are determined to succeed.

Biodiversity Planning

Biodiversity action planning at a national level

In 1992 the United Kingdom Government signed the Convention on Biological Diversity at the Earth Summit in Rio. There was recognition of the need to protect the biodiversity of the planet from dangers such as pollution, global warming, unchecked economic growth, exploitation of natural resources and ozone depletion.

Government commitment is demonstrated in the UK Action Plan for Biodiversity (1994). This identified a list of 'Species of Conservation Concern' and a sub-list of 'Priority Species' for which national conservation recovery plans and targets were written. 38 key habitats where defined which also had action plans prepared. A process was put in place to coordinate the delivery of these action plans at a UK, national and local level. This process includes continuing review of the list of priorities for both species and habitats, monitor progress toward targets and review these as needed.

The UK plan recognised action must be taken at both national and local levels and a framework of Local Biodiversity Action Plans (LBAPs) was proposed to coordinate local action to conserve biodiversity.

In 1996, the Scottish Biodiversity Group was established in order to agree and co-ordinate action in Scotland. The Group prepared the Scottish Biodiversity Strategy (2004) which involved a process of adapting the UK BAP to Scotland by considering species, habitats and cultural arrangements which differ in emphasis in Scotland compared to the rest of the UK. The Strategy includes a number of strategy implementation plans all of which concentrate on high-level prioritisation particularly of the key Scottish wide statutory bodies. In these latter plans local delivery of biodiversity is considered essential and is seen to be implemented through the LBAP mechanisms with close links to the existing Agenda 21, Community Planning and other community involvement initiatives.

The Strategy is referred to in the Nature Conservation (Scotland) Act (2004) where all public bodies are given a 'biodiversity duty' to "further the conservation of biodiversity" as they carry out their work. This legislation is a major advance in conservation thinking and builds in consideration of all aspects of biodiversity into all relevant decision making processes.

The Scottish Biodiversity List (2005[1]), documents the species and habitats considered to be of 'principal importance' for the purpose of biodiversity conservation in Scotland, and is also referred to in the Act. The list includes 1,806 terrestrial and freshwater species, with a further 109 marine species, based on whether they are on the UK BAP list, their rarity in the UK, their rarity in Scotland, their decline in Scotland and whether they are endemic to Scotland. It also lists the National Vegetation Classification plant community types which are found in Scotland. These lists are intended to be 'used to guide decision-makers such as public bodies, including local authorities, in implementing their duty to further the conservation of biodiversity in Scotland, when carrying out their normal function' even though the guidance on how to use the lists is not yet available. The species list was used in prioritising species in this LBAP

Currently the UK BAP is under review (including a review of priorities, species and habitats with action plans and targets), and a new list of Priority Species and Priority Habitats was published in June 2007[2]. These lists include an increase in the number of species considered as needing priority action (from 577 to 1,149), an increase in terrestrial habitats from 32 to 40 and an increase in marine habitats from 17 to 25. These updated lists were not available in full to be used in the species and habitat prioritisation in this LBAP. A partial review of the Scottish Biodiversity List is proposed for 2007 to take account of changes at a UK level.

[1]The Scottish Biodiversity Lists can be found at http://www.biodiversityscotland.gov.uk/pageType2.php?id=35&type=2&navID=92

[2]Report on the Species and Habitat Review, Biodiversity Reporting and Information Group, Report to the UK Biodiversity Partnership, June 2007.

The Ayrshire Biodiversity Action Plan Partnership

Conserving Ayrshire's biodiversity is not only the preserve of conservationists but relies on people in government and statutory agencies, local authorities, farmers and landowners, voluntary conservation organisations, businesses and local communities. Ayrshire's biodiversity relies on everyone whose activity either directly impacts on the natural environment, or influences the attitudes and understanding of those who do.

The ABAP Partnership intends to bring all these sectors together to work towards shared objectives and to agree priorities for the limited resources. The Partnership recognises that these individuals and organisations have different roles and responsibilities, but believes that they can easily have a shared agenda and a common approach. The overall aim for the Partnership is 'to support, encourage and positively influence the conservation and enhancement of biological diversity in Ayrshire as part of the UK and Scottish Biodiversity Planning processes.'

Membership of the Partnership is informal, broad and inclusive and involves a wide range of relevant public and voluntary sectors bodies, mostly conservation and environmental focused. Lead players in the Partnership during the preparation of this Plan included the three local authorities (East Ayrshire Council (EAyC), North Ayrshire Council (NAyC) and South Ayrshire Council (SAyC)) particularly individuals from the planning, environment, community and ranger services, the Ayrshire Joint Structure Plan and Transport Unit (AJSPTU), East Ayrshire Woodlands (EAW), Farming and Wildlife Advisory Group (FWAG), Scottish Agricultural College (SAC), Scottish Natural Heritage (SNH), Scottish Wildlife Trust (SWT) and the Royal Society for Protection for Birds (RSPB).

The work of the Partnership and coordination of the ABAP is overseen by a small Management Group as described in the Ayrshire Biodiversity Action Plan Group's Minute of Agreement. This group manages the business of the ABAP Partnership.

The first Ayrshire LBAP 2001-2005

The Ayrshire LBAP was completed in 2001 and covered an action plan for 2001-2005. The Plan was prepared by the (then) Ayrshire Biodiversity Group who remained in place to oversee its implementation. The original Ayrshire LBAP provided a major assessment of Ayrshire's biodiversity and was a valuable tool for directing conservation effort.

The LBAP included a comprehensive suite of Habitat Action Plans for 26 habitat types which together cover almost all habitat types in Ayrshire. Each plan gives a brief description of the habitat, factors affecting it and where action might be taken to conserve the habitat. Eleven species action plans were also included with detailed action plans describing the species and potential actions in Ayrshire. Each had a detailed action plan and the prescribed actions were broad and comprehensive and including activities out with the scope of organisations and individuals in Ayrshire. These actions were aspirational, identifying what could be done for each habitat or species rather than detailing a committed work programme.

The Ayrshire LBAP 2001 publication should be retained as a reference and used as the baseline description of Ayrshire's biodiversity but also as a guide to the range of actions that do or would ideally contribute to its conservation.

The need for a revised LBAP

As described above the national context has changed since the Ayrshire LBAP was first written. The Scottish Biodiversity Strategy, its implementation plans and the Scottish Biodiversity List have all been published. In addition, the Nature Conservation (Scotland) Act 2004 places a duty on all local authorities and statutory bodies to 'further the conservation of biodiversity so far as is consistent with the proper exercise of those functions'. During the same period the Ayrshire Biodiversity Group has also had the benefit of working together implementing the plan and learning from the experience, including knowing how other LBAP partnerships have been approaching similar problems.

The Scottish Executive and Scottish Natural Heritage commissioned a study to assess the progress with LBAPs[3] and in parallel the Ayrshire Biodiversity Group commissioned an assessment of

the Ayrshire LBAP[4] to clarify how effective the process had been to date. Both reviews identified a series of similar shortcomings of the original LBAPs in failing to identify achievable actions, being unable to maintain momentum and not succeeding in refocusing the participating organisations' own priorities. Most of the LBAPs, including Ayrshire's, were over-ambitious in their scope, too comprehensive in the species and habitats they considered yet too generalised in their prescriptions.

As a result of these reports the new Ayrshire LBAP Partnership decided that the Ayrshire Plan should undergo a revision to take into account changes in the wider biodiversity context and to make the document more focussed on priorities and include SMARTer[5] actions. Its content would be the work on priority species and habitats which were not already being acted on by the conservation-orientated organisations operating in Ayrshire. The Plan was also to become a working document allowing it to be updated regularly and to enable it to adjust to the progress towards the Plan's targets. Specifically the revised action plan was to be more flexible and have a reduced number of actions to ensure that it only covers priorities and local actions.

It is intended, therefore, to primarily promote the Plan as an electronic document on the internet allowing it to be easily modified as progress is made as well as providing comprehensive links to the progress reports and monitoring information.

This revised Plan was completed in 2007, almost 6 years after the original plan was written. It is a rolling document to be used as a working tool and to provide current information on priorities, ongoing work programmes and progress.

[3]*'Delivering Biodiversity Conservation in Scotland; An evaluation of the effectiveness of Local Biodiversity Action Plan Partnership and the LBAP network, and consideration of future options for local delivery' (2005)*

[4]*'Review of the Progress of the Ayrshire LBAP' (March 2006).*

[5]*SMART = Specific, Measurable, Achievable, Relevant, Time-based.*

How this Action Plan Should be Used

How this Action Plan should be used

The role of the ABAP remains as important as ever. It identifies the key wildlife elements in Ayrshire and sets priorities for nature conservation. It sets out a framework for action and is a mechanism for prioritising funding. Most importantly is provides an opportunity for bringing people together to work in partnership for the conservation of our environment.

The ABAP should be used by all who are involved with, or concerned over, the fate of the biodiversity of Ayrshire including many departments of the local authorities, statutory bodies, voluntary organisations, conservation projects, landowners, land managers, naturalists, communities, fishermen, marine interests and many others. All these organisations and individuals should use this ABAP, in conjunction with the original Ayrshire LBAP document, to:

- *Provide a baseline reference for all biodiversity involvements using the background data and descriptions of the biodiversity of Ayrshire.*
- *Prioritise their own policies and actions through reference to the list of rare habitats and species in Ayrshire.*
- *Obtain guidance for their own actions from the list of agreed habitat and species priorities and through the associated Lead Partners.*
- *Implement their part of the agreed programme of SMART actions and achieve the associated targets.*
- *Use the Partnership's monitoring programme to record and analyse their actions and to provide recognition of their contribution to the overall Plan.*
- *Use and contribute to the communication opportunities provided by the working of the ABAP to consult other partners, promote news, give encouragement, share successes, and provide support.*

The ABAP is Ayrshire's local strategy for implementing the Scottish Biodiversity Strategy. It is, and should remain inextricably linked to the priorities and targets set out by that strategy. It also provides a mechanism for a wide variety of organisations to help deliver their 'biodiversity duty'.

The ABAP is intended to guide and influence the work programmes of a range of organisations, statutory and non-statutory. It should be used as a source of reference during the revision of existing plans and preparation of new ones. For example, planning documents and strategies play important roles in guiding the strategic role of development control as a mechanism for biodiversity conservation actions in Ayrshire. These should be guided by the priorities identified in the ABAP.

Setting out the priorities

The ABAP is specific about which habitats and species are important and needing of conservation action to ensure that it will achieve its objective of targeting action. Identifying these priorities has meant ranking habitats and species, taking into account the possible relationship between the species and the habitats in which they live and the threats to them. This prioritisation process does not imply that these key wildlife features are intrinsically more important than others, but shows that they are currently deserving of particular conservation attention in Ayrshire at the current time.

The purpose of this prioritisation exercise is to identify those habitat and species which are of special conservation significance and requires active conservation measures to sustain it.

The purpose of this prioritisation is to:

Identify which of Ayrshire's species and habitats are most in need of specific conservation attention;

Assist in the allocation of limited resources towards the conservation of these key wildlife features; and

Identify those species and habitats which are currently under-protected, or do not receive adequate attention.

Selecting key wildlife features

Following the principles of biodiversity action planning, the selection of key wildlife features in Ayrshire has been informed by nationally identified priorities which have then been set within the local context. The national framework has been provided by the UK Biodiversity Steering Group Report and Scottish Biodiversity Strategy (including the implementation plans and the Scottish Biodiversity List).

The identification of these key wildlife features is not a wholly objective process and many of the judgments have not been made on sufficiently detailed information to enable a scientific assessment of the relative priorities. The process does, however, provide a practical conservation tool based on the best available knowledge. It is possible that further survey work will indicate that some habitats or species may have been overlooked and the ABAP should be adjusted in such cases as necessary. The lists are not definitive and will need to be modified over time to reflect changes in the status of the various components of the natural world and the chosen manner of defining key features.

Key species and habitats in Ayrshire are identified as being of recognised national or international importance and under threat or of particular local significance.

Prioritising Habitats

32 Ayrshire habitats were identified within the original LBAP and of these 20 are UK BAP Priority Habitats. Detailed information is not yet available for all of them and only parts of the habitat data sets[6] have been digitised. Other major data sets include the Ancient Woodland and Semi-natural Woodland Inventories dating back to the 1970s and the Raised Bog, the Intermediate Bog and the Blanket Bog Inventories dating to the 1990s. Detailed data sets at NVC level exist for a range of SSSI and non-SSSI sites throughout Ayrshire.

Most other habitats have not been surveyed in sufficient detail at an Ayrshire level to allow an assessment of the quality, extent and distribution of the habitat. Although the digitised boundaries of SSSIs and other protected sites were available those for Wildlife Sites[7] were not and the task of overlaying protected sites and recognised wildlife sites is still to be done.

Marine habitat distribution data is not readily available although a range of sample data of some marine communities is. The analysis of the original Ayrshire LBAP demonstrated that the majority of the great number of Actions identified under the 27 Habitat Action Plans had not been carried out. To achieve prioritisation of the Habitats in the Ayrshire LBAP they were looked at in terms of how much was known about them, how important were they in Ayrshire, how much threat they were under and how much additional (i.e. excluding conservation work which was already in hand) effort was needed to conserve them (see Table 1).

[6] *Phase 1 surveys of North Ayrshire, East Ayrshire and South Ayrshire 1992 to 2006*

[7] *Non-statutory sites mostly identified by the voluntary bodies but recognised as important local biodiversity sites by the local authorities in the planning process.*

Table 1: Criteria For Prioritisation of Habitats

Criteria for the prioritisation of habitats

Criteria	*Lowest Priority*	*Highest Priority*
Ayrshire has a significant proportion of the UK resource	Less than 2% of UK resource	More than 2% of UK resource
Ayrshire has a significant proportion of the Scottish resource	Less than 5% of Scottish resource	More than 5% of UK resource
Habitat has a high rate of decline within Scotland	Habitat known to have remained stable over the last 20 years	Habitat known to have declined over the last 20 years
Habitat is locally under threat	No current or extensive threats	A range of threats all of which are current
Habitat is locally fragmented but has the potential for repair	Not fragmented – habitat in substantial blocks	Highly fragmented and scattered
Habitat is important for key species	Limited diversity – mostly common species	Diverse – many rare species
Habitat is locally distinct communities or situation unique to Ayrshire	Habitat similar to habitats elsewhere	Elements of the habitat with species,
Habitat needs active conservation management (i.e. majority of sites NOT SSSI, reserves, country parks etc)	Most sites for the habitat already under positive conservation management	Most sites needing conservation management
Habitat can be directly managed for conservation	Habitat 'managed' by natural forces (e.g. marine habitats)	Habitats needing direct manipulation by humans to survive

Much of the information needed to populate the above table was not available at this stage due to poor quality, or incomplete, data about the habitats. Where this was the case the assessment had to be left blank and as a result some habitats may well increase in relative importance as more is found out about them. 0 shows the assessment of habitats.

This analysis produced a number of high scoring habitats. These were further ranked on a number of practical criteria which applied to some and not others. Of the top five habitats Maerl Beds (a very biodiverse marine algal habitat) is marine and all marine habitats have been put to one side while more information on their distribution and conservation is gathered. This is particularly important for these habitats as normal 'terrestrial' physical management is inappropriate.

Lowland Meadows include some very biodiverse grasslands in southern Ayrshire which are already SSSI and are being positively managed. It was agreed that more analysis should be done on the available grassland habitat data in relation to soils and geology to analyse the importance and potential importance of grasslands to form another HAP in the future. Upland Heathland is also extensive in south Ayrshire but much of its special interest is already under conservation management on large SSSI.

A range of initiatives involving many of the higher scoring habitats is already in hand and it is assumed that most of these will continue at least in

the short term. Preparatory work on these habitats should be done now to establish the case for an ABAP HAP in the future and suggestions on how these habitats should be considered at the moment have been documented[8].

Identifying habitats requiring action plans

The remaining priority habitats were selected for action. Coastal sand dunes emerged as one of the highest scoring habitats chiefly because it is rich in biodiversity and is under many threats. It made sense to include with it any other coastal fringe habitats most of which also had high scores. The resulting Coastal Habitats Action Plan includes the nine habitat types shown in Table 2.

The remaining priority was lowland raised bog which is an unusual habitat because it is frequently relatively uniform in nature and always clearly demarcated from other adjacent habitat types.

Prioritising Species

An Ayrshire "Long List" of species has been developed which includes all species known to occur in Ayrshire that are on the original UK Species of Conservation Concern list, the Scottish Biodiversity List or are likely to be on the new UK Priority species list. Species that are "Locally rare" have also been included (for example those which are found in fewer than 5 tetrads in Ayrshire). For completeness it also includes all species that were referred to in the 2001 Ayrshire LBAP.

This list may not be comprehensive in terms of all species meeting these criteria found in Ayrshire due to limited availability of data and will need to be updated as more information becomes available. All species on both the UK Action Plan and Scottish BAP list were checked to see if they are known to occur in Ayrshire to avoid species likely to be a high priority being missed off the list. All species were then ranked to identify those of higher priority in Ayrshire. Although species recorded as 'Accidental' or 'Possible' in Ayrshire are included on this list for completeness they have not been ranked.

In ranking species on this list species are assessed according to the criteria given in Table 3 based on information from publications and local and national experts. Two of these criteria reflect existing species prioritisation process (i.e. UK Priority Species selection and Scottish Biodiversity Strategy List selection) and therefore the species will either meet these criteria or not. The remaining four criteria have a gradient between the lowest priority and the highest priority (as shown in the table) and each species will be considered against each of these criteria. It is not possible to do this quantifiably due the great variation in information available; however most weight will be given to the UK and Scottish status of each species.

A somewhat arbitrary cut-off point has been determined to select those species which should be considered a Key Species in Ayrshire; however they includes all Ayrshire species which are on both the Scottish Biodiversity List and the UK Priority Species list as well as some other species which scored highly against the criteria. These Key Species are listed in 0

Habitat action plans (and associated habitats)

Habitat Action Plan name	*Prioritised habitats*
Coastal HAP	Coastal sand dunes * Coastal vegetated shingle* Coastal and flood plain grazing marsh* Coastal salt marsh* Maritime cliffs and slopes* Saline lagoons* Mudflats* Coastal scrub and cliff woodland Coastal grasslands
Raised Bog HAP	Lowland Raised Bog*

** UK BAP Priority Habitat*

Table 2: Habitat Action Plans

[8] *Ayrshire LBAP Habitats discussion paper, Biodiversity Solutions, January 2007.*

Table 3: Criteria For Prioritising Species

Criteria for prioritising species

Criteria	*Lowest priority*	*Highest priority*
1 Is the species on the Scottish Biodiversity List?	No	Yes
2 Is the species on the UK list of priority species?	No	Yes
3 Is it suffering from decline locally?	Population increasing	Population in decline
4 Is it a local rarity?	Common	Rare
5 Is it under threat locally?	No threats identified	Direct threats affecting sites such as inappropriate management
6 Where is Ayrshire in relation to the species' geographic range?	Small proportions of UK population (less than 5%) OR outlying – at the edge of its range	Highly localised with high proportion (20% +) of UK population (includes endemic species)

Identifying Key Species requiring action plans

The Key Species identified in 0 form the basis for the selection of species for which individual action plans have been produced as part of the Ayrshire LBAP. However, these have been subject to a further selection exercise to identify which species need an Action Plan.

To do this consideration was given to the following issues:

1. Does this species require actions specific only to that species? (if they are not specific its problems might be addressed through action for a wider group of species or within a habitat plan)
2. Is it possible to deliver these actions locally?
3. Can this species be used as a flagship for a group of Ayrshire priority species which need similar actions?

Therefore action plans were not proposed for species or habitats where conservation objectives are wholly or substantially influenced by national policy or action. Instead, the prioritisation concentrated on those Key Species which could effectively be tackled at a local level. Many of the species which require action can be most efficiently conserved by managing their habitats. Where this was the case, the presence of these species helped with the process of identifying priority habitats and the species-specific requirements used to modify the detail of the habitat's management.

In addition consideration was given to what work was underway already. Species Action Plans were not written to detail existing work but only to address gaps where additional partnership action was needed.

It follows that the list of Key Species which need specific Action Plans is deliberately quite short. It should also be recognised that the current set of Ayrshire Key Species Action Plans is far from complete due to the lack of available information or expertise, particularly for certain groups such as invertebrates, liverworts and lichens. Species may be either missed completely or under-prioritised. As progress is reviewed new Action Plans will be written for these species.

Key Species with Action Plans

Species	*Action Plan name*
Water vole	Water vole (Arvicola terrestris)
Farmland Birds	Skylark (Alauda arvensis) Corn bunting (Miliaria calandra) Eurasian tree sparrow (Passer montanus) Grey partridge (Perdix perdix) Reed bunting (Emberiza schoeniclus) Common linnet (Carduelis cannabina)

Identifying Core Themes

The action plans for individual species and habitats, presented in this document relate specifically to the conservation and enhancement of those elements of our biodiversity which are in most urgent need of conservation attention, and are therefore highly focused. This targeted approach is not a fault of the biodiversity action planning process but is a necessary element of it and ensures that particular conservation priorities are incorporated into action on the ground.

Certain themes run through many of the individual action plans. For example, many of the plans identify the need for improved information on the distribution of a species and all the plans rely on a core reporting system. These actions are not repeated into each individual Action Plan but are grouped in Core Theme Action Plans.

In identifying core themes 4 areas where identified:

LBAP implementation, reporting and monitoring

The LBAP will only be delivered by effective cooperation and coordination between a diverse range of partners. Members of the partnership will need to be able to speak for their organisation when relevant and to agree actions or resources that they can contribute to the ABAP's programme of work. For this to work effectively clear direction and leadership is essential both for the plan as a whole and for the individual action plans.

Data need to be collated on progress towards the delivery of all actions in the ABAP, identifying blockages to action, successes and problems and must also be fed into the UK and Scottish BAP processes. As well as process information, data on progress towards the real outcomes is also needed (i.e. changes in habitats and species distributions/ ranges)

Adequate dedicated resources for the effective coordination of the ABAP are essential if the ABAP is going to be implemented and maintained. This coordination role will include coordinating the partnership, encouraging wider membership, interaction with Scottish and UK initiatives, coordinating and facilitating projects, carrying out administration of the partnership and coordination of the reporting mechanisms. Up to date information on the current ABAP priorities and actions must also be readily available through a web-based portal.

This is an underlying theme without which the ABAP cannot be successfully implemented therefore an action plan for this area will start immediately. This rolling action plan will, of necessity, continue as long as the Ayrshire Biodiversity Action Plan exists.

Data and Information

A sound understanding of Ayrshire's biodiversity is an essential starting point for identifying and monitoring conservation measures. During the preparation of the ABAP it was clear that there was inadequate information on species to effectively identify priorities, particularly in some very poorly recorded groups whose current distribution cannot be determined. Similarly for habitats large gaps in data coverage and surveys completed to different standards meant that the extent and status of all habitats were difficult to analyse and identify.

The lists of Key Habitat and Key Species have, therefore, been derived from the best available information. This data is inadequate in many instances and the lack of information in itself

prevents effect conservation action. The status of all Key Species and Habitats will be monitored to identify whether targeted conservation action is required in the future.

There needs to be a shared strategy for data collection and analysis throughout Ayrshire that can ensure that all existing and new data are collated, verified and computerised and made readily available. This will only be achieved through the establishment of a biological records centre.

The Ayrshire Biological Record Centre Committee[9] commissioned a report[10] on the future of biological data handling in Ayrshire funded by SNH and the local authorities. The recommendations, including how a BRC could be set up, were presented to the Ayrshire LBAP Steering Group. Although this has led to discussion both within individual organisations and within the LBAP Steering Group a consensus on the way forward has not yet been found.

Data handling is, therefore, a core, underlying theme which provides a framework for the success and development of the ABAP as well as for the individual action plans. There is a clear need for coordinating biological recording in Ayrshire and for increasing the availability and quality of records. This Plan will start immediately and will expand to promote wider targeted recording of key species and habitats once a structure is in place. These activities will be incorporated in future plans based on this core theme.

Wider Environment

The biodiversity of Ayrshire extends beyond the reaches of statutorily designated sites and nature reserves. It includes both rare and common species and habitats. The objective of the biodiversity action plan is to protect and enhance all of Ayrshire's biodiversity, although some species and habitats which require special and urgent actions have been given specific action plans this does not mean that conservation measures are not needed for other biodiversity. Indeed the biodiversity of special places is dependant on a healthy biodiversity in the wider world for it to survive.

Out with statutory sites Ayrshire does not have a properly identified network of local biodiversity sites (although some work has been done on identifying sites, mainly by SWT), taking into account local priorities. A network of Local Biodiversity Sites[11], should be identified throughout Ayrshire. These sites should be used to guide planning decisions, target biodiversity action (including actions within individual action plans) and target relevant advice and support for landowners. These sites should complement the network of the network of linear features including hedgerows, rivers and streams, railway lines and roadside verges.

Conservation measures are not just related to the protection of habitats and species but include the sympathetic management in order to maintain or enhance their value. Currently there is a lack of targeted advice and support to landowners and managers, most agri-environment advice is only available at the request of owners and not targeted to owners of important areas.

A system for improving identification, promotion and protection of Local Biodiversity Sites cannot be effectively developed without a Local Biological Record Centre. The new RuralDevelopment Contracts have yet to be developed and any work to help target and use this scheme effectively cannot come into play until more information is available about the likely structure and availability of this scheme. This core theme will, therefore, be considered in the second tranche of action plans.

Planning

Public bodies have a statutory obligation to further the conservation of biodiversity under the Nature Conservation (Scotland) Act 2004. Strategic Environmental Assessment (SEA) is another component in ensuring that biodiversity is integrated into polices. However specific practical guidance on how to add or integrate biodiversity conservation issues into strategies, policies and plans is not readily available. Such guidance is not available in a format that can be used by those responsible for this wide variety of plans, who are not ecologists. This includes development plans but also a whole range of strategies and plans for example strategies for outdoor access, forestry and tourism, plans for Core Path networks, waste and the management of parks and Community Planning.

Development plans and the development control process are a key factor in the conservation of

[9] *NB the ABRC Committee at the time was attempting to run a BRC on a voluntary basis.*

[10] *Developing A Biodiversity Information System For Ayrshire - Feasibility Study And Development Proposals, Biodiversity Solutions, 2005.*

[11] *Recent (2006) national guidelines on Local Nature Conservation Sites have been published by SNH, SWT, COSLA and RTPI and UK RIGS. These guidelines specifically provide a framework for Local Nature Conservation Site systems to be run to common standards. The guidelines can be found at www.snh.org.uk/publications/on-line/heritagemanagement/LNCS/*

biodiversity. Again there is a lack of practical measures available to assist planners in ensuring biodiversity is effectively considered. In general the recognition of biodiversity in the planning process has tended to be focussed on statutory nature conservation designations and protected species only. Although this approach contributes to the conservation of biodiversity it does not take due account of other valuable habitats and species, especially within a local context. In addition there are no practical mechanisms for allowing due consideration to be given to any agreed priorities.

The ABAP could offer a valuable mechanism to assist public bodies in their statutory obligations by providing a framework for integrating biodiversity actions with all forms of strategic planning in developing effective polices to contribute to biodiversity conservation.

SEA is a relatively new process which looks as the possible impact any new policies or plans on the environment. Local authorities and others are still finding their feet with regard to how to apply this process to their activities. Key to SEA is having good knowledge about the existing environment and until there is better availability of information to support the development of practical measures for integrating biodiversity into other plans and provide information for SEA this is difficult to do. This core theme will, therefore, be considered for an action plan in the second tranche of plans.

Identifying Core Themes requiring action plans

As a result of the reviewing the many underlying themes behind the LBAP two Core Themes were identified for action beginning in 2007. These are shown in Table 5.

Table 5: Core Themes for Action Plans

Core Themes with Action Plans

Core Theme	*Scope*
1 LBAP implementation, reporting and monitoring	Coordination work programme, annual review, communications with Partnership and widening LBAP Partnership. Recording of all conservation actions, feeding information into BARS (for local and national LBAP)
2 Data and Information	Provision of coordinated information on Ayrshire wildlife (LRC) and providing adequate information for ongoing review, assessment and implementation of LBAP.

Action Plans

Defining Action Plans

Individual Action Plans for species, habitats and core themes have been written according to a rolling programme and with varying timescales. The initial tranche of Action Plans has been prepared for those Species and Habitats and Core Themes which had the greatest and most urgent need and which were possible within the available resources. It is envisaged that additional plans will be written as additional information becomes available, issues change and additional resources become available. An ongoing review of the whole plan will be carried out every year although additional Action Plans can always be considered when needed.

Some plans will be achievable in a relatively short timeframe and other will need to operate over a considerable number of years. Individual plans will normally be written for between 2-5 years. At the end of the plan's timescale a full review will establish whether or not further action is required and, if appropriate, a new plan will be written.

Writing Action Plans

Each individual action plan has objectives and associated targets. The Objective (and its targets) is designed to be SMART that is specific, measurable, achievable, relevant and time-based. In particular the context of the Objective within the Plan and within the UK and Scottish BAP objectives has to be clearly justified.

For each target as few Actions as possible have been identified to achieve the target, within the time span of the Plan. Each individual Action has associated process targets (used to judge if the action has been completed as was originally envisaged) which again must be SMART (see Table 6 below).

SMART: actions and process targets

Specific	give sufficient detail on what actions are proposed defining exactly what is required to be done and who will do it.
Measurable	with precise information on how you will know if the action is complete – how much should be done, should an action continue until a result is achieved? Measures should be quantifiable.
Achievable	with confirmation from all of those people who will be involved that they will be able to carry out their part.
Relevant	with a clear explanation of why this approach is being used and why these actions are being taken.
Time-based	a fixed deadline for completion that falls within the time frame of the Plan.

Implementing Action Plans

A Plan Leader has been nominated for each Action Plan who is an identified individual, usually one of the key players in delivering the Action Plan. They have the role of helping support partners deliver their individual actions, facilitating reporting and assisting with trouble shooting where difficulties arise. Although this individual has a high level of responsibility for ensuring the plan is delivered it may not be the most demanding role in terms of time commitments. Each Plan Leader will devise their own methodologies for ensuring work is coordinated but for complex action plans this will normally involve coordinating an Action Plan delivery group involving the Plan Leader, the Lead Partners and any others who are relevant. Such a group will meet only as required and will not become a permanent group. Each Plan Leader will prepare a statement on the mitigation of non-native invasive features as part of the Action Plan should that prove necessary.

A Lead Partner, normally an individual from a specific organisation, has been identified for each objective of each Plan although in simple plans they may cover several objectives. The Lead Partner coordinates everyone who is involved with the implementation of the actions and may often carry out much of the work themselves.

Other Delivery Agents in the plans are normally organisations, but occasionally individuals, whose involvement is necessary for the actions to be

successfully carried out. In some cases they will be helping carry out the action themselves or they might be advising, supporting or involved in the negotiation or consultation aspects of the work.

The ABAP Management Group will receive updating reports from the Plan Leaders and will, therefore, be able to follow the progress of the ABAP as a whole. The Group is also able to consider proposals for new plans and will oversee the preparation and implementation of any further Action Plans basing their support on the effectiveness of the current Action Plans and the availability of resources, both financial and human.

Reporting, monitoring and review of Action Plans

Reporting and monitoring progress is critical to the success of the plan. Because of the importance of the process of monitoring the plan is structured into its own Core Theme Action Plan - ABAP implementation and review.

Data on the progress of the actions in all of the plans will be collated and reported using the Biodiversity Action Reporting Scheme (BARS) a web-based database set up by the UKBAP used by all LBAPs. Progress on all plans and individual actions will be reported annually to the ABAP Management Group and BARS used as a key mechanism for disseminating this information to partners.

The Action Plan will be reviewed every year on an ongoing basis to ensure that the process does not become too great a task. Consideration will be given to any changes needed in the list of Key Species, Key Habitats and any additional Action Plans when required.

Core Theme Action Plan: ABAP Implementation, Reporting and Monitoring

The Issues

The ABAP will only be delivered by effective cooperation and coordination between a diverse range of partners. For this to work effectively clear direction and leadership is essential both the plan as a whole and for the individual action plans.

Data need to be collated on progress towards the delivery of all actions in the ABAP, identifying blockages to action, successes and problems. This information needs to be made available to all partners involved in delivering associated actions. This information is also required by the UKBAP team on a regular basis. Collation of this information on a regular basis is necessary to enable the ABAP partnership to assess what progress is being made to delivering the actions set out within the plan (progress on process).

In addition to this process information, assessments must be made on the progress towards the real outcomes – targets set in action plans, usually defining the outcomes for each habitat or species in terms of population change, recovery etc. This information will allow a true assessment of whether the action plan has been a success. For example the actions in a plan could each have been completed successfully but the desired outcome not achieved.

Regular review of the plan enables adjustment of priorities and actions as progress is made, new opportunities arise, there are changes in the status and therefore relative priorities of species or habitats or additional information becomes available.

Solutions

Adequate dedicated resources for the effective coordination of the ABAP are essential if the ABAP is going to be implemented and maintained. This coordination role will include coordinating the partnership and encouraging wider membership and interaction with Scottish and UK initiatives, coordinating and facilitating projects, carrying out administration of the partnership and coordination of the reporting mechanisms. Up to date information on the current ABAP priorities and actions will be readily available through a web based portal.

Each individual Action Plan (Core Theme, Species or Habitats) will have a Plan Leader whose role is to coordinate partners involved in delivering each action and identify problems and resource requirements. Each Plan Leader will produce an annual progress report.

A reporting mechanism for the Action Plan will be implemented using BARS[12], an information system that supports the planning, monitoring and reporting requirements of national, local and company Biodiversity Action Plans. It is a web-based application that allows those involved in managing and delivering BAPs, including LBAPs, to enter their targets and actions and report on them. BARS is also the mechanism used to collate data at a Scottish and UK level on progress against all national BAPs and is used by lead partners to collate and present data. This process reporting will be coordinated centrally for Ayrshire to ensure that reports are timely, standardised and give a clear picture of progress.

An annual review of the Plan will be completed by the Partnership. This will include a review of priorities species and habitats and the need for individual action plans. When an individual action plan comes to an end (i.e. its timescale finishes) the Action Plan will be reviewed and proposals presented to the Partnership to consider whether a further cycle is required.

Monitoring of progress towards Species and Habitats outcomes will be incorporated into each individual Action Plan.

Current Activity

No implementation and reporting systems are in place.

Timescale

This action plan will operate over a four-year period.

Plan Leader

Ian Johnson - Ayrshire Joint Structure Plan and Transport Unit

[12]Full information about BARS including introductory and help guides can be found at http://www.ukbap-reporting.org.uk/. Data entered for existing BAPs can also be accessed from this site.

Objective Ref:	Objective	Target	Action Ref	Action	Target	Lead Partner	Other Delivery Agents
CTIR-1	To ensure effective coordination of, and communication within, the ABAP Partnership to enable effective partnership working towards its overall aim	ABAP Partnership meeting held annually Regular updates on progress to ABAP website.	CTIR-1.1	The ABAP Management Group to meet quarterly to ensure effective coordination of whole ABAP	ABAP Management Group meeting quarterly and minutes of meetings available to all ABAP partners.	ABAP Coordination	ABAP Management Group
			CTIR-1.2	The full Partnership to meet annually to share experience and contribute to the overall monitoring of effectiveness of ABAPs	ABAP Partnership meeting annually and proceedings of meetings available to all ABAP partners.	ABAP Coordination	ABAP Partnership
			CTIR-1.3	Widen the ABAP Partnership by publicising the ABAP projects and progress to increase number of organisations and individuals involved in promoting, using and implementing the ABAP	An increase of 25 individuals involved in delivering ABAP actions each year between 2007 and 2009	ABAP Coordination	ABAP-Management Group, ABAP-Partnership, ABAP-Partners
			CTIR-1.4	Establish Website to act as an information hub for he ABAP partnership, including core information about the ABAP works, progress on action plans and links to monitoring data	Website established with full information on the ABAP during 2008	ABAP Coordination	
			CTIR-1.5	Maintain ABAP website to ensure current information is always available.	New material posted to the website every month. Updates on dated information made within 3 weeks of expiry	ABAP Coordination	
			CTIR-1.6	All Plan Leaders providing feedback on progress, issues and solutions affecting ABAP actions to ABAP Management Group	Written update to Management Group from each Plan Leader at least once a year.	ABAP Coordination	ABAP-Plan Leaders, ABAP-Management Group

Objective Ref:	Objective	Target	Action Ref	Action	Target	Lead Partner	Other Delivery Agents
CTIR-2	To ensure effective communication with Scottish BAP process, UK biodiversity process and other LBAPS	ABAP's activities known to all Scottish LBAPs, Scottish Biodiversity Group and UKBAP movement through contact with each at least once a year	CTIR-2.1	Participate in the UK and Scottish biodiversity fora to ensure effective communication	ABAP represented at all relevant Scottish and UK LBAP partner meetings	ABAP Coordination	
			CTIR-2.2	Maintain regular contact with the Scottish Biodiversity Implementation team, in particular in relation to the use and interpretation of the Scottish Biodiversity List and work of the Local Implementation Group	Contact with SBIT at least once a quarter	ABAP Coordination	
			CTIR-2.3	Carry out appropriate liaison with neighboring LBAP partnerships to share experience and identify opportunities for joint working	At least one joint action plan initiated with a neighboring LBAP by Summer 2010	ABAP Coordination	
CTIR-3	To ensure effective reporting and review of ABAP to enable monitoring of progress to targets and to contribute to reporting at a Scottish and UK level.	Full update on progress towards all actions entered into BARS every year. Annual report on progress towards objectives and aims publicly available annually	CTIR-3.1	Enter new ABAP actions and targets on BARS	ABAP fully available on BARS during 2008	ABAP Coordination	
			CTIR-3.2	Maintain current data on all action and targets on BARS, including adding new action plans as they are agreed	Full update on progress towards all actions every year		
			CTIR-3.3	Complete an annual review of progress towards objectives of all action plans	Annual statement of overall progress towards objectives agreed by Management Group and published on website	ABAP Coordination	ABAP-Management Group
			CTIR-3.4	All action plans should be reviewed and assessed on a cyclical basis, including the need for new action plans as further information /resources become available.	Review of all action plans completed 6-months before the end of the plan and proposals for new action plans invited by the Management Group annually	ABAP Coordination	ABAP-Management Group

Core Theme Action Plan: Data and Information

The Issues

A sound understanding of Ayrshire's biodiversity is an essential starting point for identifying and monitoring conservation measures. During the preparation of the ABAP it was clear that there was inadequate information on species to effectively identify priorities, particularly in some very poorly recorded groups. Similarly for habitats large gaps in data coverage meant that the extent and status of all habitats could not be identified.

The species information that does exist is disparate and held by many different bodies. There is no organisation promoting recording in Ayrshire or targeting effort to priority species/areas. Existing habitat data are incomplete and survey has been completed to different standards making it difficult to analysis data. Many groups of species are under-recorded or data are old and current distribution cannot be determined. There are relatively few active recording groups in Ayrshire (compared with some other neighbouring areas) and data are not been collected on any structured basis.

The lists of Key Habitat and Key Species have been derived for the best available information. However it is apparent that this data is inadequate in many instances and the lack of information in itself prevents effect conservation action. The status of all Key Species and Habitats should be monitored to identify whether targeted conservation action is required in the future.

Solutions

There needs to be a shared strategy for data collection and analysis throughout Ayrshire that can ensure that all existing and new data are collated, verified and computerised and made readily available. This will be achieved through the establishment of a biological records centre.

Increased, targeted recording will help fill gaps in existing data and maintain current information of the status and distribution of species and habitats. This effort will be targeted towards Ayrshire key species and habitats and focus on engaging volunteers in the process. However this effort needs coordination and will only be achieved once systems are in place for managing biodiversity data.

Current Activity

The Ayrshire Biological Record Centre Committee commissioned a report in 2005 - Developing A Biodiversity Information System For Ayrshire - Feasibility Study And Development Proposals, (Biodiversity Solutions). This report was funded by SNH and local authorities and the recommendations presented to the Ayrshire LBAP Steering Group. Although discussion have happened both within individual organisations and within the LBAP Steering Group a consensus on the way forward has not yet been found.

SNH is currently reviewing all existing Phase 1 data for Ayrshire. This project includes digitising existing survey, setting common standards to enable different surveys to be analysed on a wider scale and completing additional survey work to fill gaps in survey coverage. This work is part of regional project and is likely to be completed in 2008.

Timescale

This action plan will operate over a two-year period. Work on revaluating habitats priorities, increasing recording activity and monitoring Key Species will be tackled at a later date and will enable future reviews of the list of Key Species and priority habitats.

Plan Leader

Iain Hossack - North Ayrshire Council

A Biodiversity Action Plan For Ayrshire

Objective Ref:	Objective	Target	Action Ref	Action	Target	Lead Partner	Other Delivery Agents
CTDI-1	To establish an Ayrshire-wide biological records centre	A biological records centre covering Ayrshire established, systems in place to collate data and progress identifying services needed by key users competed by Summer 2009	CTDI-1.1	Convene a regional meeting to consider geographic option s for managing biological data across central/western Scotland.	Regional meeting held by October 2007	SNH	
			CTDI-1.2	Establish a management group to oversee the development of a LBRC in either in Ayrshire or a wider area	First meeting of Management group held and terms of reference and membership agreed by May 2008	NAC	AJSPTU SAyC EAyC SWT SNH
			CTDI-1.3	Prepare and implement development programmer to setup data management systems and collate high priority datasets for Ayrshire	Suite of data policies completed by December 2008 Links with key recorders developed by April 2009 and initial base of 50,000 priority records computerized and verified	NAC	AJSPTU SAyC EAyC SWT SNH
			CTDI-1.4	Develop a funding package for LBRC for three years, linked to initial provision of services especially to LAs	Three-year funding package secured by April 2009	NAC	AJSPTU SAyC EAyC SWT SNH
			CTDI-1.5	Set up LBRC	LBRC begins providing core service to key users by August 2009	NAC	AJSPTU SAyC EAyC SWT SNH

Habitat Action Plan: Lowland Raised Bog

Current status

A comprehensive survey of the lowland raised bogs in Scotland has resulted in the Lowland Raised Peat Bog Inventory which includes detailed survey reports of all bogs with information about their management and condition. The Ayrshire peat bogs were mostly surveyed by McTeague and Watson in 1989 with three surveyed later by Jonathan Hughes in 1994 and one by Theo Loisou in 1998. The inventory contains 39 sites in Ayrshire 22 in East Ayrshire and 17 in North Ayrshire. One other site has been identified in South Ayrshire. The key features of the peat 'dome' which underlies the long-term viability of a moss are the peat depth and the topography which mainly determine the hydrology. While the survey of these features is desirable it is both technically difficult and very labour intensive and in most cases will not be possible through the mechanisms available to the ABAP. Similarly it is not thought practical to carry out detailed vegetation maps of those bogs which have not yet been surveyed.

Current factors affecting the habitat

All of the raised bogs have been 'damaged' in some way with the original peat 'dome' cut into and/or the delicate peat bog vegetation trampled or enriched. This has generally led to a loss of the more specialist peat bog species, a drying out of the moss surface and colonisation by birch scrub. Most mosses have been deliberately drained and/or bisected by roads or railways. Peat extraction has now ceased (NAC to confirm) in Ayrshire but in the past the peat has been cut for domestic purposes or commercially extracted (mostly through the 'sausage extraction' method). More recently some bogs have drained and planted up with conifers although this use is not know supported by the Forestry Commission. A few sites have been used for landfill. The major current 'use' is grazing by cattle and sheep with the consequent enrichment or pollution from feeding, trampling, overgrazing and erosion. However, many of the mosses that are not grazed have been abandoned and colonised by scrub. All mosses are prone to fire damage which tend to occurin the late spring and early summer as a result of accidental fires or vandalism.

Current action

Raised bog SSSI, of national importance, have been declared for Barlosh Moss and Dalmellington Moss in East Ayrshire and Cockinhead Moss, Bankhead Moss and Dykeneuk Moss in North Ayrshire. Cockinhead, Bankhead and Dykeneuk mosses have been recognised as of European importance and been declared SACs. Dalmellington Moss is a wildlife reserve of the SWT.

Local Plan status

Both local authorities' Local Plans offer site protection for sites which are SSSI and higher and some control over developments on non-statutory wildlife sites. These are Policy ENV10 for East Ayrshire and ENV6 Nature Conservation for North Ayrshire. North Ayrshire also specifically supports the LBAP in Policy ENV7 Ayrshire Local Biodiversity Action Plan (LBAP) and specifies that peat bogs are protected both under ENV6 and from peat extraction under Policy ENV15 Peat Extraction.

Management

SNH have set up the South Scotland Bog Scheme to encourage appropriate management of the designated raised lowland bog sites in the area with payments for drain and ditch blocking, grazing management and scrub control and tree removal where appropriate. This scheme is not only valuable for the management of the five SSSI in Ayrshire but also acts as a guide for the possible costs associated with restoring and managing a non-statutory moss. Dalmellington Moss has been managed as a wildlife reserve by SWT for many years. Some moss management has been funded by the Rural Stewardship Scheme and there is a potential for raised bog management to feature in the Land Management Contracts scheme.

Guidance

Thanks to several recent, large-scale initiatives in Europe there is now quite a lot of useful guidance on raised bogs. This includes guidance on the classification of bogs12 and the practical management aspects13.

A Biodiversity Action Plan For Ayrshire

Long-term objectives

This HAP has the long-term vision to:

Bring as many of the lowland raised bogs into favourable conservation condition as possible and maintain the irrecoverable sites as sites for wildlife

Plan Leader

The HAP Leader is Bruce Phelp, Scottish Agricultural College

Monitoring

The general monitoring of the HAP will be implemented under the actions put in place under the relevant Core Actions. However, this phase of the HAP specifically has its own monitoring plan to measure the success of the practical actions taken. The data from the surveys that are to be undertaken (large heath, water beetles) will not only enable ranking of the bog sites but will also form a baseline for invertebrates in this habitat and will need to be very carefully recorded and stored.

A Biodiversity Action Plan for Ayrshire

Objective Ref:	Objective	Target	Action Ref	Action	Target	Lead Partner	Other Delivery Agents
HPLRB-1	To understand the lowland raised bog resource in Ayrshire and its condition by producing a full list of raised bogs with their size, location, ownership, vegetation cover, current condition, associated wildlife, the conservation measures already being taken and using this data to rank the sites in order of their conservation importance	Database set up and sites ranked by 2007	HPLRB-1.1	Collate and analyse available information from Lowland Raised Bog Inventory, Wildlife Sites register and species records using a GIS database	Database set up and mechanism for updating in place by December 2007	Bruce Philp, Scottish Agriculture College	SNH
			HPLRB-1.2	Preparation of recording methodology and recording proforma	Proforma prepared by December 2007		
			HPLRB-1.3	Rank sites in order of their known conservation importance based on size, intactness, condition of the moss surface, associated wildlife and need for management (This ranking to be reviewed as more data becomes available)	Sites initially ranked by February 2008 which includes data on hydrology and topography		FWAG, SAC, SEERAD
			HPLRB-1.4	Contact owners and visit bogs to establish all ownership boundaries, its current use, its condition and the degree of empathy of the owner to bog restoration	All owners visited and data added to database by October 2008		FWAG SWT SEERAD SAC

Objective Ref:	Objective	Target	Action Ref	Action	Target	Lead Partner	Other Delivery Agents
HPLRB-2	To identify the relative value of the raised bogs based on their invertebrate importance using water beetle communities as indicators.	All bogs ranked based on invertebrate surveys by 2009	HPLRB-2.1	Survey bogs for water-beetle populations using standard sampling method and expert identification of samples	Site status report produced by December 2009		Garth Foster
HPLRB-3	To safeguard the specialist wildlife of lowland raised bogs by encouraging their management through providing owners and managers with advice and guidance on best practice.	30 owners provided with guidance by 2009. 20 owners visited demonstration sites by 2009	HPLRB-3.1	Make best practice advice available to bog owners by training all LRB HAP surveyors and advisors and equipping them with information for a structured programme of visits to owners	30 owners provided with management information by 2009	Gill Smart, SWT	FWAG SAC SNH
			HPLRB-3.2	Provide access to two exemplar managed raised bogs for bog owners through a programme of guided site visits with appropriate literature to Dalmellington Moss and, if possible , to one other	20 owners visited demonstration sites by 2009		

Objective Ref:	Objective	Target	Action Ref	Action	Target	Lead Partner	Other Delivery Agents
HPLRB-4	To rehabilitate example lowland raised bogs in Ayrshire through, initially, remedial work on two raised bogs not currently under conservation management, including a monitoring programme and proposals for the management of further sites.	Management of two raised bogs in progress by 2009	HPLRB-4.1	Select target bogs by ranking sites on available data (see HPLRB-1-2) and their suitability for restoration	Two sites selected with the owners agreement on the work by 2008	Tommy Loudon, FWAG	SWT SNH SAC LRB Site Owners
			HPLRB-4.2	Draw up proposed management actions for both bogs, cost work and seek funding	Detailed plans for conservation work complete by 2008 Conservation work funded by 2009		SWT SNH SAC
			HPLRB-4.3	Implement management work	Programme of management work begun by 2009		
			HPLRB-4.4	Draw up and implement monitoring programme to establish the medium to long-term effects of management	Monitoring programme in place by 2009		
			HPLRB-4.5	Prepare proposals for further conservation actions for lowland raised bogs based on the experience gained during the HAP	Proposals available for consideration of ABAP Management Group by 2009		

Habitat Action Plan: Coastal Habitats

Current status

This Plan covers the thin strip of habitats along the junction between the sea and the land. It excludes the marine component below low tide. The inland edge varies depending on whether the habitat concerned has been either formed from the sea or is obviously influenced by the sea, in terms of the species found within it.

It includes nine of the habitats described in the original LBAP of which seven (coastal salt marsh, coastal sand dunes, coastal vegetated shingle, maritime cliffs and slopes, mudflats, coastal and floodplain grazing marsh and saline lagoons) are UK BAP Priority Habitats. There are also the two extra habitats of coastal grasslands and coastal scrub and woodlands which although similar in many ways to those found inland are clearly influenced by the salt spray, moisture and wind from the sea.

The range of wildlife along the coastal strip is very varied including the well-known wintering waders, ducks and seabirds but also many types of maritime plants and insects. There has been little detailed description of Ayrshire's coastal wildlife except for some surveys of particular groups on certain sites. It is, however, obvious that Ayrshire does hold a range of species, particularly insects associated with sand dune systems, which are at their northern limit in this area. There is evidence that certain maritime plants, butterflies and other insects may be declining and have been lost from certain sites. However, the rare (SBAP and UKBAP) northern mining bee (Colletes floralis), a specialist species of western sand dunes, has been discovered at the Beach Park, Irvine in 2007 after an apparent absence in the area since 1900.

There are already 60 sites along the coast which have a conservation designation (i.e. SSSI, Wildlife Sites or Local Nature Reserves) and where, for some of them, the coastal wildlife is being positively managed.

There are, however, extensive areas of 'coastal' habitat which has yet to be expertly assessed for its wildlife value. These are most extensive as fragmented areas in and around past and present developments. There has been little recent detailed survey work done and both the wildlife resource of the Ayrshire Coast in general and the fate of individual species in particular is not well understood.

Current factors affecting the habitat

Although there has been no specific analysis of the extent of change along the coast it is self-evident that there are a number of activities which have altered the coastal strip over the last hundred years. Development has resulted in the expansion of many of the coastal towns with their associated roads and sea defences to prevent coastal erosion. The flat coastal plain has also resulted in the construction of extensive explosive factories, power stations, sand extraction companies and landfill sites. These have been followed by holiday camps, caravan parks and golf courses. These latter examples indicate the very special draw the coast has for people leading to more car parks, intensive beach cleaning and dune stabilisation. Some of the raised beaches in the south have been improved for agriculture.

Current action

As described above, 21 of the 60 designated sites (35%) are under positive management by SNH, RSPB, SWT or the local authorities. The remainder may be being managed for their wildlife but there is no direct knowledge of either the owner's intention or of the health of the wildlife on these sites.

Local planning status

The Ayrshire Joint Structure Plan, in its policy ENV7 Natural Heritage Designations, makes it clear that the three Councils shall recognise international and national natural heritage designations and support additional Local Nature Reserves and work with others on the implementation of the LBAP. Policy ENV 10 Integrated Coastal Zone Management policy indicates that North and South Ayrshire Councils 'shall bring forward proposals for a coastal zone management plan'.

The North Ayrshire Local Plan (excluding the Isle of Arran) lists wildlife sites (SINCs) and Policy ENV 6 Nature Conservation provides protection from development of international and national designated sites. It also provides protection for SINCs. Policy ENV 7 Ayrshire Local Biodiversity Action Plan (LBAP) supports the identification of habitats and species protected by national and

international legislation but also supports the identification of opportunities for enhancing the natural heritage including corridors and linkages and management proposals to enhance the biodiversity. Policy ENV 8 Coastal Zone recognises three levels of existing development of the coast (developed, undeveloped and remote) and restricts developments accordingly particularly to avoid the coalescence of development.

As part of the Regeneration Strategy for Ayrshire the Scottish Ministers set up the Irvine Bay Regeneration Company in North Ayrshire to promote development in the towns around the bay. The Council has entered into a development partnership with NPL Estates (the current owners) to develop the Ardeer Peninsular through a master plan which covers the areas originally undeveloped because of the safety restrictions imposed by the old explosives factory. The current NPL proposals have not been accepted by the Council and further changes in the plans for the area are expected. NPL Estates have already had a vegetation survey done of the area, have proposed that they fund a conservation manager for the area for the next 20 years and welcome the idea of being involved with local conservation interests. The company have also put forward proposals for a nature conservation after use of the nearby East Garnock sand and gravel site. The remainder of the old ICI factory is now owned by Chemring Group PLC and will continue to make 'military energetic materials' although their site has not yet been securely fenced off from the NPL Estates land.

South Ayrshire Council's Finalised Local Plan 2002 includes a specific Wildlife Strategy. This strategy includes protection of sites of nature conservation importance, encouragement of appropriate management and enhancement of habitats and supporting green networks. The Council also will apply biodiversity principles to their own working, will support the Ayrshire LBAP and help raise community awareness of biodiversity. The strategy also lists all provisional and confirmed wildlife sites and bird sites.

South Ayrshire Council has also produced an Indicative Coastal Strategy which identifies seven categories of existing development of the coastal strip and allocates different areas to these categories. The implication of this strategy is that the existing areas will be kept as they are and any further developments will have to be appropriate to their surroundings.

Scottish Enterprise also have a clear view on what might happen along the coast of Ayrshire both in the promotion of a deep water container port at Hunterston but also through their Sailing Action Plan and the Clyde Coastal Framework.

Most organisations relevant to the coast are members of the Clyde Forum which covers the estuary as far as the southern border of Ayrshire but the Forum has declined in its effectiveness as a policy-forming organisation.

Management

With such a wide range of habitats involved it is difficult to identify which of the current management practices, or lack of management, needs to be addressed first. An obvious concern for the soft habitats such as sand dunes, salt marsh, shingle and mudflats is fragmentation. This happens by developments, often small, which divide up a habitat making it both shrink in size and become isolated from the rest of the habitat. In many cases this has led to the decline of the natural forces which keep these habitats dynamic with the result that they 'succeed' to less valuable habitats for example sand dunes reverting to whin scrub. Dunes are also very prone to be 'stabilised' through planting with commercial grass species and/or planted up with trees as has been done on many of the golf courses.

As the level of 'damage' to the natural habitat is very variable, each case will need to be looked at in turn to see what degree of improvement might be possible while accommodating the current land uses.

Guidance

There is quite a lot of technical guidance on the management of sand dune systems although most is about erosion control, stabilisation and managing for public access. A UK Network for Sand Dune and Shingle Conservation Management has been recently set up (see www.hope.ac.uk/coast). Less information is available on the other habitats but guidance will be available through the UK BAP

HAP contacts etc.

However, much of the guidance required during this HAP is at a low level and will centre on awareness raising and participation of the public. Each of the Objectives will need to include the development of ideas on what is relevant especially with the help of those who already interact with the public, such as Rangers, but also through coastal recreational industries (country parks, caravan parks, marinas) etc with possible information outlets through Wild Scotland and other websites.

Objectives

The overall vision for this complex of habitats is to:

a) Retain as much of the most specialist coastal habitats (e.g. sand dunes, salt marsh, rich coastal grasslands) as is possible, in units as large as possible.

b) Achieve positive management for as much of the coastal habitats as possible for their specialised coastal biodiversity especially where the land has another use.

c) Stimulate an enjoyment and appreciation of Ayrshire's coastal wildlife and an interest in its welfare amongst the people of Ayrshire

The first three years of the Coastal HAP has identified eight Objectives to address the major areas of concern. However, the ABAP should expect to have other benefits from the HAP including opportunities for raising the ABAP Partnership's profile, making the general public more aware of Ayrshire's coastal wildlife, involving individuals in the work through recruitment for surveys or by using popular 'public surveys' and raising awareness of Ayrshire's biodiversity through contact with the owners and managers of the sites being surveyed. Careful use of the contacts made through this HAP will help with other current work of the ABAP and with future actions.

Plan Leader

The HAP Leaders for the Coastal Habitats Plan are Iain Hossack (NAyC) and Fiona Ross (SAyC).

A Biodiversity Action Plan for Ayrshire

Objective Ref:	Objective	Target	Action Ref	Action	Target	Lead Partner	Other Delivery Agents
HPCH-1	To conserve, as far as possible, the condition & importance of sand dune wildlife habitat & its biodiversity in the 'south Irvine area' and identifying opportunities for habitat de-fragmentation, rehabilitation and re-creation.	Proposals for a network of potentially linked and managed biodiversity sand dune habitat sites in the 'south Irvine area' identified by 2009	HPCH-1.1	Collate all known data about the soils, habitats, plants and invertebrates of the 'south Irvine area' to define the area and to produce ranked lists of nationally and locally important plants and invertebrates	Boundary to the sand dominated area defined by June 2008. Ranked lists of plants and invertebrates produced by October 2008	SWT	SWT SNH KAGM Carol Crawford
			HPCH-1.2	HPCH-1-2Establish contact with all relevant site owners and evaluate their reaction to the biodiversity aspects of their land	All relevant owners approached and their responses recorded by December 2008		SWT NAyC
			HPCH-1.3	Re-survey to Phase 1 the habitats of the area with the emphasis on identifying core areas, areas which could be linked to help with de-fragmentation, future habitat improvements and habitat management requirements.	Detailed annotated habitat map on GIS produced by September 2009		NAyC Consultant
			HPCH-1.4	Produce biodiversity opportunities, site linkage, habitat rehabilitation, habitat enhancement and habitat management proposals for the 'south Irvine area' with stakeholders.	Proposals document produced by December 2009		SNH NAyC

Objective Ref:	Objective	Target	Action Ref	Action	Target	Lead Partner	Other Delivery Agents
HPCH-2	To assess the importance of the biodiversity of coastal cliff woods, coastal glen woods and coastal scrub sites and produce proposals for their management and expansion potential.	State of the coastal woodlands report with proposals for management produced by 2009	HPCH-2.1	Review all available GIS based and written record information (e.g. woodland inventories, Phase 1 maps, SSSI records/ WGS/SFGS records) in order to identify appropriate sites, establish their ownership and make contact with the owners	Database of sites with boundary and ownership details and mechanisim for updating established by May 2008	Bruce Davidson (EAW)	SNH FCS NTS (poss use of Girvan Community Groups who are currently involved in community woodlands) EAW staff Volunteers Contract surveyors
			HPCH-2.2	Collate and analyse existing survey information. Survey a representative sample of non-designated coastal woods and scrub areas using standard techniques	Site survey reports completed by October 2009		
			HPCH-2.3	Produce state of the coastal woodlands report covering the wildlife importance, management required and expansion potential, for consideration by the ABAP	Report with proposals produced by December 2009		
			HPCH-2.4	Identify, seek agreement for, and commence implementation of coastal woodland management demonstration sites – 1ea in North & South Ayrshire	2 no. Publicly accessible examples of coastal woodland demonstrating practical approaches to sustainable management by December 2009		EAW Landowners

Objective Ref:	Objective	Target	Action Ref	Action	Target	Lead Partner	Other Delivery Agents
HPCH-3	To establish the extent and abundance of the butterfly species associated with the coast and their food plants and to identify the actions needed for their conservation.	State of the coastal butterflies report with proposals for management produced by 2009	HPCH-3.1	Survey, over two seasons, five target species and their food plants through a public survey and a structured specialist survey	Produce collated and annotated records of sightings with distribution maps for all species and their food plants by May 2008 Produce site descriptions for the main butterfly populations by September 2009	David Welham BC-A	BC-SW
			HPCH-3.2	Draw up Small Blue re-introduction proposal to IUCN guidelines for consideration by the ABAP	Proposal paper produced by April 2009 October 2008		Keith Futter BC-SW
			HPCH-3.3	Produce state of the coastal butterflies report summarising survey results and proposing necessary conservation actions for consideration by the ABAP	Report with proposals produced by April 2010		BC-SW

Objective Ref:	Objective	Target	Action Ref	Action	Target	Lead Partner	Other Delivery Agents
HPCH-4	To establish the conservation importance of the coastal terrestrial invertebrate species, communities, the sites where they occur, the threats to their habitats and the actions needed for their conservation	State of the coastal invertebrates report with proposals for management produced by October 2010	HPCH-4.1	Collate and analyse all known data to produce ranked lists of target species based on their rarity and perceived threat to them and a descriptive lists of the sites from which they have been recorded	Ranked list of species produced by August 2008. Annotated list of notable sites produced by August 2008	SNH to lead on 1st action	
			HPCH-4.2	Produce a structured survey plan to cover species on known sites and suitable other sites	Produce survey plan by August 2008		
			HPCH-4.3	Implement structured survey through visiting experts, commissioned survey and volunteers	Survey sites and species as identified in survey plan by August 2010		Consultants Visiting experts
			HPCH-4.4	Produce state of coastal invertebrates report with proposals for conservation action	Report produced for consideration by ABAP by October 2010		

Objective Ref:	Objective	Target	Action Ref	Action	Target	Lead Partner	Other Delivery Agents
HPCH-5	To establish the current conservation importance of the coastal plants the rare plants, the sites where they occur and the actions needed for their conservation.	State of the coastal plants report with proposals for management produced by 2009	HPCH-5.1	Collate and analyse existing data of notable coastal plants including key butterfly food plants (see HPCH-3) to produce ranked lists of target species and target sites for survey	List of target species produced by September 2008 List of target sites produced by October 2008	Carol Crawford NRC	BSBI SWT NAyC-R SNH
			HPCH-5.2	Implement a structured survey of target coastal plants using the public, Ayrshire botanists and visiting botanists	Survey coastal plants by September 2010		BSBI SWT NAyC-R SNH NTS
			HPCH-5.3	Produce state of the coastal plants report including distribution maps and annotated site lists showing key areas for coastal plants and the conservation measures needed to conserve them	Report produced by December 2010		
HPCH-6	To assess the coastal bird species and their biodiversity importance, abundance, rate of population change and the health of their habitats including sites of importance for over-wintering, migrating and breeding species associated with the coast and any conservation actions needed	State of the coastal birds report with proposals for management produced by 2009	HPCH-6.1	Collate and analyse existing data on coastal breeding, migrating and wintering birds and their sites supplemented with further survey if required	Annotated list of coastal bird species produced by September 2008 Annotated list of coastal bird sites produced by September 2008	David Grant SAC	RSPB
			HPCH-6.2	Produce state of the coastal birds report along with recommendations of conservation actions needed	State of the coastal birds report produced by September 2009		

Objective Ref:	Objective	Target	Action Ref	Action	Target	Lead Partner	Other Delivery Agents
HPCH-7	Provide detailed guidance for decision makers on the species of importance, the places where they are currently found and the conservation measures needed to safeguard and enhance their habitats.	Produce detailed guidance on Ayrshire's coastal wildlife and its conservation within an updated Coastal Habitats action plan by 2010	HPCH-7.1	Collate, map and analyse existing data on coastal habitats, coastal conservation sites and others sites of biodiversity importance. (providing a baseline of current knowledge)	On-going GIS system for mapping importance coastal sites established by November 2008. (see CTDI-1)	North Ayrshire Council for first action	ALL
			HPCH-7.2	Co-ordinate and analyse all data gathered from previous objectives. Identifying biodiversity rich sites, areas needing conservation action, species needing conservation action. (providing up to date picture of coastal status)	Updated Coastal Habitats action plan produced by December 2010		
			HPCH-7.3	Analyse action7-2 & provide appropriate guidance	March 2011		ALL

Monitoring

The monitoring of the progress of the HAP will be done through the mechanisms set up within the ABAP's Project monitoring. The surveys proposed above (i.e. Ardeer, Irvine sites, woodland and scrub, butterflies, invertebrates, plants) will need to record their finding in an accurate and permanent way as in all these cases the data produced will not only be the basis for decision making but will become a baseline against which the success of longer term conservation measures can be taken.

Species Action Plan: Water vole

Current status

The Water vole is a UK BAP Priority Species14 and was one of the species selected for an action plan in the first Ayrshire LBAP. The main action proposed at the time was to look at the records of water voles, and those of their main predator the mink, to see what survey work was required.

This led to a survey commissioned by SNH and carried out by Cresswell Associates during 2006 of all of Ayrshire as well as other local authority areas. The results of the survey were very alarming as only 9 sites with water voles were found, south and east of Girvan and north-east of New Cumnock all in the upper reaches of the catchment of the River Stinchar. Some of these sites appear to be over the watershed in Dumfries and Galloway. Previous surveys of the water vole in Ayrshire were carried out by the Vincent Wildlife Trust in 1989-1990 and 1996-1998 and the 2006 survey looked at the sites previously surveyed. The first survey found signs of water voles in 61.1% of the sites, the second survey found signs in only 9.1% of sites and the recent survey found signs in only 3% of sites. This is a loss of 93% of sites in the 17 years (over 2 sites a year) that the surveys covered.

It is fairly typical of what is happening to the water vole throughout the UK with the species being particularly vulnerable in the lowland river systems where mink have a wide range of prey species to live on and plenty of suitable breeding sites. The extent of the upland water vole habitats has only been recognised relatively recently and is clearly marginal habitat as far as mink is concerned. These sites are generally acidic and support less marginal and emergent plants than many sites in the lowlands and often include very small burns and even extensive areas of marsh and bog.

However, information from elsewhere does show that the water vole has recently been seen elsewhere including reports from water bailiffs from the upper Doon catchment, reports in several of the wind farm environmental assessment reports and sightings in Darly Golf Course, Troon.

Current factors affecting the habitat

Although the spread of the semi-aquatic mink is thought to be the main cause of the decline in the water vole the recent survey makes it clear that the heavy grazing and trampling of riparian habitats causes the upland marginal habitats in particular to become even less suitable for the voles. General pollution of rivers does not seem to be important especially in Ayrshire where water quality of much of the river systems is high. Agricultural enrichment may well have localised impact on freshwater communities but is often beneficial to emergent plants which form the main food supply of the voles.

Current action

No specific actions have been taken to conserve the water vole although the members of the Ayrshire Rivers Trust have undertaken riparian habitat improvements and mink control both of which may well benefit water voles.

Local Plan status

The water vole, as one of the priority species identified in the original LBAP has been adopted by the local authorities as a species which must be considered in any development proposal. The species is normally included in any environmental assessments where water courses or wetlands are involved.

Management

There has been a lot of work over the last decade on developing management techniques for water voles15 and much of this guidance has been adopted and carried out on projects throughout the UK.

Guidance

The UK Water vole Steering Group is active mainly in England and Wales but does provide guidance through Rob Strachan who is the UK's expert on the species.

Long-term objectives

The 2006 survey identifies four objectives which need action to achieve them. These are:

a) protection and enhancement of sites where water voles are present.

b) enhancement of the habitat in the area around those sites to promote growth of existing colonies.

c) enhancement of habitat within corridors between the 'hotspots' to attempt to link the populations.

d) enhancement of the habitat within the study area in general to further reduce fragmentation of the water vole population.

With such a history of decline and with only a broad-brush survey as the basis of the identification of the water vole populations further, detailed, survey is required to identify exactly what the resource is like and what action might be appropriate.

Plan Leader

The SAP Leader is Brian Shaw, Ayrshire Rivers Trust.

Monitoring

The general monitoring of the SAP will be implemented under the actions put in place under the relevant Core Actions. However, this phase of the SAP specifically has its own monitoring plan to measure the success of the practical actions taken. This is particularly critical because of the very rapid expansion (and contraction under pressure from mink predation) which is possible with this species. Populations are best monitored in early winter or spring when vegetation is at its minimum.

Once this programme of work has been completed the water vole SAP Group can consider what further actions, if any, are appropriate in other years.

Objective Ref:	Objective	Target	Action Ref	Action	Target	Lead Partner	Other Delivery Agents
SPWV-1	To establish the extent of the populations in the upper reaches of the Stinchar catchment based on the data from the 2006 survey	The extent of the areas occupied by water vole populations identified by spring 2008	SPWV-1.1	Survey the tributaries of the Stinchar catchment using the standard water vole survey methodology, based on the 2006 survey data but extending the area of search to one kilometre beyond any known or new populations	Survey started in autumn 2007 and completed in spring 2008. All populations mapped on GIS		Consultant
			SPWV-1.2	Contact Dumfries and Galloway LBAP to establish the presence of any water vole populations contiguous with those in the Ayrshire catchment	Any relevant population data identified by spring 2008. Any joint working arrangement with D&G agreed by spring 2008		DGLBAP
SPWV-2	To establish the condition and potential of the riparian, marshland and bog habitats within the areas identified as occupied by water voles and to identify the threats to them	Annotated habitat condition maps available by spring 2008	SPWV-2.1	Survey the habitats within the water vole areas using Phase 1 methodology with target notes on habitat condition and threats	Survey complete by spring 2008		Consultant
			SPWV-2.2	Analyse habitat maps to establish the potential extent of riparian and wetland areas within the water vole areas	Analysis available by summer 2008		WVSAP

Objective Ref:	Objective	Target	Action Ref	Action	Target	Lead Partner	Other Delivery Agents
SPWV-3	To improve the riparian and/or wetland habitats for water voles within the areas currently occupied by the water voles	Two riparian and/or wetland improvement projects in progress by winter 2008	SPWV-3.1	Work with the owners and fishery interests to identify which stretches of river or wetland occupied by water voles might benefit from management action	Two areas identified by spring 2008		ART RSDSFB FWAG landowners
			SPWV-3.2	Cost identified projects and seek funding for the necessary works	Project details confirmed and funding available by summer 2008		FWAG
			SPWV-3.3	Implement two habitat improvement projects	Projects begun by winter 2008		
SPWV-4	To monitor and report on the known water vole populations in the Stinchar catchment both within any improved areas and out with such areas	Monitoring scheme in place by spring 2008	SPWV-4.1	Design monitoring scheme for known water vole populations and develop methodology for implementation and reporting	Monitoring scheme in operation spring 2008		
SPWV-5	To establish the presence and extent of other water vole populations in Ayrshire based on surveying any sites where voles have been reported from recently	All sites with water vole records since 2002 surveyed by spring 2008	SPWV-5.1	Collate all post 2002 records from commercial environmental surveys and reports from water bailiffs etc. to identify possible populations of water voles	Possible population identified by winter 2007		
			SPWV-5.2	Survey all sites identified using standard water vole survey techniques	All possible sites surveyed by spring 2008		

Species Action Plan: Farmland Birds

Current status

A number of the species identified with the highest biodiversity status in Ayrshire are farmland birds. Many of these have been regarded as common but recent studies have shown huge declines in their populations mainly due to changes in farming practices, including pesticide use, hedge removal, more efficient weed removal including from hedge bottoms and changes in the time of year when crops are sown and harvested. The main species have been identified through the UK BAP process and through the bird Red List based on the findings of UK wide surveys including the Common Bird Census, the Breeding Bird Survey and the New Atlas of Breeding Birds. The latest understanding of the population changes are shown in Table 7.

Table 7: data from the State of the UK's Birds 2005 [17]

Species	% decline over the period 1970-2004	% decline over the period 1994-2005	UK trend since 1995	Progress towards UK BAP targets
Tree sparrow	-94	23	Increasing	Partial local recovery. May benefit from measures introduced into agri-environment schemes
Corn bunting	-89	-21	Continuing decline	Targeted by agri-environment schemes/local recovery initiatives in England and Scotland
Grey partridge	-88	-40	Continuing decline	Still declining in Scotland
Bullfinch	-57	-26	Fluctuating but still declining	May benefit from measures introduced into agri-environment schemes
Yellowhammer	-54	-17	N/a	N/a
Skylark-53	-13		Continuing decline	May benefit from measures introduced into agri-environment schemes
Curlew-50	-36	N/a	N/a	N/a
Song thrush	-50	18	Increasing	Partial population recovery. May benefit from measures introduced into agri-environment schemes
Linnet-49	-7		Continued decline	May benefit from measures introduced into agri-environment schemes
Lapwing	-46	-21	Continued decline	May benefit from measures introduced into agri-environment schemes
Reed bunting	-39	30	Stable	May benefit from measures introduced into agri-environment schemes
Snipe N/a	N/a	N/a	N/a	N/a
Redshank	N/a	N/a	N/a	N/a

Note: the data is from the Common Bird Census (CBC) plots from 1966-2000 and the Breeding Bird Survey (BBS) from 1994-2005. It is recognised that these data include information which reflects unrepresentative habitat coverage, small sample sizes and naturally fluctuating populations.

[17] Report supported by RSPB, BTO, WWT, CCW, EN, EHS)NI), SNH and Birdwatch.

Table 7: data from the State of the UK's Birds 2005

All these species (with the possible exception of corn bunting) are found in Ayrshire and eight of them are Key Species in the current ABAP, selected through the prioritisation process. The other species are lapwing and curlew, which have been included here because they are on the SBAP list and their status in Ayrshire is unclear and snipe, redshank and yellowhammer because their status is unclear but thought to be declining in Scotland. These thirteen species are grouped under the Farmland Bird SAP and their conservation status is shown in Table 8.

Table 8: UK and Scottish conservation ranking of farmland birds

Species	UKBAP Priority Species	SBAP Species List	Red List	Amber List	LBAP SAPs in UK	LBAP SAPs in Scotland	Key Ayrshire Species in current ABAP	Species Action Plan in original ABAP
Tree sparrow		X	X	X		31	3	X
Skylark	X	X	X		46	7	X	
Linnet	X		X		27	3	X	
Reed bunting		X	X	X		32	2	X
Corn bunting		X	X	X		26	3	X
Bullfinch		X	X	X		26	3	X
Grey partridge		X	X	X		33	4	X
Song thrush		X		X		45	6	X X
Lapwing	X		X	36	2			
Snipe			X	19	4			
Curlew	X		X	18	4			
Redshank				X	18	5		
Yellowhammer			X		16	2		

All of these species, with the exception of corn bunting, breed in Ayrshire and all, with the exception of tree sparrow and corn bunting are regarded as widespread. The tree sparrow has a small population, which is very localised. Six species have influxes of birds from out with Ayrshire during migration and/or winter period. Details of the species are given in Table 9.

The status of farmland birds in Ayrshire[18]

Species	Distribution in Ayrshire	Breeding	Winter visitor	Passage migrant
Tree sparrow	Localised	Yes		Yes
Skylark	Widespread	Yes	Yes	Yes
Linnet	Widespread	Yes	Yes	Yes
Reed bunting	Widespread	Yes		
Corn bunting	Extinct?	Currently unconfirmed recently		
Bullfinch	Widespread	Yes	Yes	Yes
Grey partridge	Localised	Yes		
Song thrush	Widespread	Yes	Yes	Yes
Lapwing	Widespread	Yes	Yes	Yes
Snipe	Widespread	Yes	Yes	Yes
Curlew	Widespread	Yes	Yes	Yes
Redshank	Widespread	Yes	Yes	Yes
Yellowhammer	Widespread	Yes		

Current factors affecting the habitat

These species include seed eating species either nesting in hedges (linnet, bullfinch), in holes (tree sparrow, house sparrow), on the ground (corn bunting and yellowhammer) or in dense vegetation (reed bunting). All of these species feed their young on invertebrates; mainly insects and spiders. The invertebrate eating birds nest on the ground in tussocks (skylark – which also eats seeds, redshank curlew), marshy areas with taller vegetation (snipe), on bare ground (lapwing), in hedge bottoms or tussocky field margins (grey partridge – which mainly eat weed seeds and green leaves) or in hedges (song thrush).

Removal of hedges, or their very severe cutting, has resulted in loss of nesting sites for some species, as has the felling of hedgerow trees. Loss of 'weedy' habitats either within crops or along field margins has also meant a loss of weed seeds for the birds' winter survival and changes in the timing of ploughing and cultivation have meant a loss of winter stubble as a seed source. Lapwing nests may be vulnerable to being destroyed through field operations or livestock trampling from March to June.

Ayrshire has only very small amounts of arable land (about 12%), mostly along the coast, which has restricted the potential distribution of the corn bunting. The extensive pasture land from improved to hill rough grazing provides habitats of various qualities especially as many of the lowland fields are surrounded by hedges although many of them are severely 'pruned'.

Current action

Various initiatives are in hand in Ayrshire that include agricultural habitat improvement for birds. In the past these have included the Rural Stewardship Schemes, and work done by FWAG, SAC and the Game Conservancy Trust. However, the full extent of these activities has not been collated and no information is available on the results of any habitat management or agri-environment schemes. Various bird survey schemes record farmland birds through members of the BTO and the Breeding Bird Surveys, SOC and general bird recording and the RSPB including through the

Volunteer and Farmer Alliance Project. This latter project has surveyed 30 farms between 2002 and 2006 and has provided management advice along with a map of the farm showing the current distribution of birds.

A SAC, SNH and GCT three-year research project on the yellowhammer in the Cessnock basin started in 2006. This research will examine winter abundance and breeding success of yellowhammers on lowland grassland farmland, and will aim to investigate the benefits of sowing wild bird cover crops in these grassland systems.

Work will begin on a new bird atlas (2007-2011), which will increase the understanding of declines in range of farmland birds in Scotland.

Local Plan status

There are no specific references to these bird species through the local authorities' policies apart from the general concern over protected species or species with UK, Scottish or Ayrshire conservation status.

Management

Considerable research has been carried out on the feeding and nesting requirements of farmland bird species and this has allowed the development of management prescriptions that could potentially benefit these species. In broad terms, such measures include over-winter stubble, grassy field margins, 'conservation headlands' which are unsprayed with pesticides, extensive cropping and wild bird cover crops. These measures aim to provide an abundant and continuous supply of small seeds to maintain over-wintering flocks and a supply of invertebrates throughout the breeding season. Optimum cutting of hedges and planting new hedges can provide suitable nesting places and cover for some species.

Recent research outwith Ayrshire has included an extensive research project by RSPB, (part of the Farmland Bird Lifeline project), on corn buntings in northeast Scotland showing that many nests were destroyed by silage cutting. From this work guidelines for possible inclusion into Rural Development Contracts are being developed. A tree sparrow project has been established around Lough Neagh in Northern Ireland, by a partnership of eleven bodies, involving large numbers of nest boxes and feeding stations. The aim of the project is to gain information on habitat use by tree sparrows at a landscape scale.

Guidance

Guidance is available on practical measures that can be taken to improve the habitats on farmland for these birds. A guide[18] is available on the various species of importance on Scottish farmland and how management can benefit them. The RSPB produces guidance on a number of aspects of management for farmland birds including farmland waders[19] and passerines and habitats such as hedgerows, grass margins, wild bird cover and arable cropping on livestock farms (available via the advisory section of the RSPB's website[20]). FWAG also provide information about management for wildlife on farms via their website[21]. As hedgerows are covered by a UKBAP HAP, guidance on their survey and assessment is provided by DEFRA[22] which concentrates on ancient and species-rich hedgerows but has information about hedgerows in general.

Long-term objectives

This plan aims to encourage measures that benefit farmland birds across Ayrshire through demonstration, sharing good practice and encouraging changes in management initially in small, targeted areas. An important objective is to show that such measures are compatible with or even beneficial to commercial farming. Monitoring of the success of projects will allow measures to be evaluated.

Plan Leader

The SAP Leader is Zoë Clelland, RSPB.

Objective Ref:	Objective	Target	Action Ref	Action	Target	Lead Partner	Other Delivery Agents
SPFB -1	To assess the distribution and significant range contractions of target farmland bird species in Ayrshire	Map key areas for target farmland bird species by December 2007	SPFB -1.1	Hold workshop with local experts to map key areas and sites for target farmland bird species based on local knowledge	Maps produced and circulated by December 2007	RSPB	SOC BTO FWAG SNH SAC SGRPID
		Identify areas of significant range contraction for target farmland bird species by December 2010	SPFB -1.2	Compare BTO atlas data from 2007/08 with SOC atlas data from 1991/97 to identify areas of significant range contraction	Map areas of significant range contraction of target species by December 2010	RSPB	SOC BTO
		Confirm the breeding status of corn bunting in Ayrshire by 2009	SPFB -1.3	Keep and follow up any reports of breeding corn bunting	Report on the known status of corn bunting in Ayrshire in Autumn 2009	SOC	BTO RSPB FWAG

Objective Ref:	Objective	Target	Action Ref	Action	Target	Lead Partner	Other Delivery Agents
SPFB -2	To establish the potential of significantly improving the value of hedgerows and field margins for farmland birds through management	Map key areas where hedgerows and field margins are in good and poor condition by December 2007	SPFB -2.1	Hold workshop with local experts to map key areas and sites where hedgerows and field margins are in good or poor condition	Maps produced and circulated by December 2007	RSPB	SOC BTO FWAG SNH SAC SGRPID
		Identify land managers with potential to improve management of hedgerows and field margins who are keen to participate in management and demonstration projects	SPFB -2.2	Identify 2 large commercial dairy farms within the mapped areas who are willing to improve habitats on their farms for demonstration purposes	Agreement reached with 2 commercial dairy farmers to alter management to benefit farm operations and wildlife, by February 2008	FWAG	SAC SGRPID
			SPFB -2.3	Identify a cluster of c.10 farmers within the mapped areas who would be receptive to improving their hedgerows and field margins for farmland birds through changes in management	Agreement reached with c. 10 farmers to alter management to benefit farm operations and wildlife, by February 2008	FWAG	SAC SGRPID
			SPFB -2.4	Identify stretches of hedgerow and road verges that are managed by Local Authority Roads Departments or AMEY.	Maps produced and circulated by December 2007	SayrC	EAC NAC AMEY

Objective Ref:	Objective	Target	Action Ref	Action	Target	Lead Partner	Other Delivery Agents
SPFB - 3	To demonstrate how changes in management can benefit farmland birds and be compatible with a successful commercial farm	Improve hedgerow and field margin habitats on 2 large commercial dairy farms and use to demonstrate techniques and benefits to others	SPFB - 3.1	Produce plans for changes in management to improve hedgerow and field margin habitats on 2 commercial dairy farms	2 plans written and agreed by LBAP group and farmers by April 2008	FWAG	SAC RSPB SNH SGRPID
			SPFB - 3.2	Implement plans and obtain funding to do so if required	Plans implemented by December 2008	FWAG	SAC RSPB SNH SGRPID
			SPFB - 3.3	Hold an event at both farms to demonstrate benefits to other farmers and advisors	Hold event at each farm during 2009	FWAG	SAC RSPB SNH SGRPID
		Improve hedgerow and field margin habitats on a cluster of c.10 farms and use to demonstrate effects on target species	SPFB - 3.4	Produce plans for changes in management to improve hedgerow and field margin habitats on a cluster of c.10 farms	Plans written and agreed by LBAP group and farmers by April 2008	FWAG	SAC RSPB SNH SGRPID
			SPFB - 3.5	Implement plans and obtain funding to do so if required	Plans implemented by December 2008	FWAG	SAC RSPB SNH SGRPID
			SPFB - 3.6	Monitor the changes in populations of target species on the farms with plans	Carry out baseline surveys of farms in 2008 and repeat surveys in 2009	SOC	FWAG RSPB

Objective Ref:	Objective	Target	Action Ref	Action	Target	Lead Partner	Other Delivery Agents
		To integrate advice on management for farmland birds within existing advice to farmers	SPFB -3.7	Attend 6 demonstration events and give advice on management for farmland birds	Attend 3 events in 2008 and 3 in 2009	RSPB	FWAG SNH SOC
		To integrate advice on management for farmland birds within agricultural teaching programmes	SPFB -3.8	Provide input into teaching courses at SAC	Give 1 lecture and run 1 field visit for agricultural students on farmland birds in 2008 and 2009	SAC	FWAG RSPB
SPFB - 4	To demonstrate how changes in management can benefit farmland birds and be compatible with safe, well managed roads	Improve management of hedgerow and verge habitats on sections of road to demonstrate techniques and benefits	SPFB -4-1	Hold a workshop with road managers and conservation groups to identify opportunities to improve management of hedgerows and verges	Workshop held in February 2008 with output including a map of project areas and a list of general measures to be taken more widely	SAyC	EAC NAC AMEY RSPB FWAG SNH
			SPFB -4-2	Produce plans for changes in management to improve hedgerow and verge habitats for sections of roads	Produce plans by April 2008 and implement plans during 2008	SAyC	EAC NAC AMEY RSPB FWAG SNH
			SPFB -4-3	Monitor the changes in populations of target species on the road sections with plans	Carry out baseline surveys of farms in 2008 and repeat surveys in 2009	SOC	RSPB

Monitoring

The general monitoring of the SAP will be implemented under the ABAP Implementation, Reporting and Monitoring Core Theme Action Plan. Monitoring to assess success of individual actions is included within the plan.

Annex A: Acronyms used in this document

Acronym	Full title
ABAP-C	Ayrshire Biodiversity Action Plan-Coordination
ABAP-HG	Ayrshire Biodiversity Action Plan-Habitat Group/s
ABAP-LP	Ayrshire Biodiversity Action Plan-Lead Partner/s
ABAP-MG	Ayrshire Biodiversity Action Plan-Management Group
ABAP-P	Ayrshire Biodiversity Action Plan-Partnership
ABAP-PG	Ayrshire Biodiversity Action Plan-Partnership Group
ABAP-PL	Ayrshire Biodiversity Action Plan-Plan Leader/s
AJSPTU	Ayrshire Joint Structure Plan and Transport Unit
ART	Ayrshire Rivers Trust
BC-A	Butterfly Conservation-Ayrshire
BC-SW	Butterfly Conservation-South West Scotland Branch
BSBI	Botanical Society of the British Isles
BTO	British Trust for Ornithology
DGLBAP	Dumfries and Galloway Local Biodiversity Action Plan group
EAW	East Ayrshire Woodlands
EAyC	East Ayrshire Council
EAyC-R	East Ayrshire Council Rangers
FC	Forestry Commission
FWAG	Farming and Wildlife Advisory Group
GC	Game Conservancy
IBRC	Irvine Bay Regeneration Company
KAGM	Kelvingrove Art Gallery and Museum
NAyC	North Ayrshire Council
NAyC-R	North Ayrshire Council Rangers
NPLE	NPL Estates
NRC	Natural Resource Consultancy
RSDSFB	River Stinchar District Salmon Fisheries Board
RSPB	Royal Society for the Protection of Birds
SAC	Scottish Agricultural College
SAyC	South Ayrshire Council
SEERAD	Scottish Executive Environment and Rural Affairs Department
SGEG	Scottish Golf Environment Group
SNH	Scottish Natural Heritage
SOC	Scottish Ornithologists' Club
SWT-AB	Scottish Wildlife Trust-Ayrshire Branch
WVSAP	UK Water Vole Species Action Plan group

Annex B: Ayrshire Priority Habitats

Local Priority Habitats selection criteria

		Ayrshire has a significant proportion of the UK resource	Ayrshire has a significant proportion of the Scottish resource	habitat has a high rate of decline within Scotland	habitat is locally under threat	habitat is locally fragmented but has the potential for repair	habitat is important for key species	habitat is locally distinct	habitat needs active conservation management (i.e. majority of sites NOT SSSI, reserves, country parks etc)
1	Maerl beds	yes	yes	?	yes	?	yes	?	yes
2	Saline lagoons	no	no	no	no	no	no	no	no
3	Seagrass beds	no	no	?	?	?	no	no	yes
4	Benthic zone	no	no	no	?	no	yes	?	yes
5	Rocky shore	no	no	no	no	no	no	no	yes
6	Pelagic zone	no	no	no	no	no	no	no	yes
7	Coastal saltmarsh	no	no	no	?	?	?	no	yes
8	Sheltered muddy gravels	no	no	no	no	no	no	no	yes
9	Coastal sand dunes	no	yes	no	yes	yes	yes	yes	yes
10	Coastal vegetated shingle	no	yes	no	?	no	yes	yes	no
11	Maritime cliff and slopes	no	no	no	no	no	?	?	?
12	Raised beach platform	no	no	no	?	no	yes	?	?
13	Rivers and streams	no	yes	no	yes	?	yes	no	?
14	Mesotrophic lakes	no	no	no	?	no	?	no	?
15	Fens	no	no	yes	?	no	yes	no	?
16	Purple moor grass and rush pastures	no	no	no	no	no	no	no	yes
17	Reedbeds	no	no	no	no	no	no	no	yes
18	Ancient and/or species-rich hedgerows	no	no	yes	?	?	no	no	yes
19	Cereal field margins	no	no	?	no	no	no	no	yes
20	Upland calcareous grassland	no	yes	no	yes	no	yes	yes	no
21	Lowland dry acid grassland	no	no	no	no	no	no	no	yes
22	Lowland meadows	no	yes	yes	yes	yes	yes	yes	no
23	Coastal and floodplain grazing marsh	no	no	?	?	?	?	no	yes
24	Planted conifers	yes	yes	no	no	no	no	?	yes
25	Lowland wood-pasture and parkland	no	no	no	no	no	no	no	yes
26	Upland mixed ashwoods	no	no	no	no	no	yes	no	yes
27	Upland oakwood	no	no	no	no	no	yes	no	yes
28	Wet woodland	no	no	?	no	no	yes	no	yes
29	Blanket bog	no	yes	no	yes	no	no	yes	no
30	Lowland raised bog	yes	yes	yes	yes	yes	yes	?	no
31	Upland heathland	no	yes	yes	yes	yes	yes	?	yes
32	Urban	no	no	no	no	?	?	no	yes

ANNEX C. Key Ayrshire Species See section 4.4 for the process of selection for these key species

Taxon	Common name	Group	Subgroup	Marine or maritime species?	Scottish Biodiversity List species?	UK Species Action Plan?	Main habitat(s)	Comments
Triturus cristatus	Great Crested Newt	Amphibians	Salamanders, Sirens, Newts		Yes	Yes	Lowland ponds	SNH Species Action List (1)
Alauda arvensis	Skylark	Birds			Yes	Yes	Open grassland	
Botaurus stellaris	Great Bittern	Birds			Yes	Yes	Reedbeds	
Caprimulgus europaeus	European Nightjar	Birds			Yes	Yes	Heathland, open woodland	
Carduelis cannabina	Common Linnet	Birds			Yes	Yes	Heath, scrub, farmland	
Circus cyaneus	Hen Harrier	Birds			Yes		Moorland	SNH Species Action List (1), Species Action Plan in 2001 Ayrshire LBAP
Crex crex	Corn Crake	Birds			Yes	Yes	Wet lowland hay meadows	SNH Species Action List (1)
Emberiza schoeniclus	Reed Bunting	Birds			Yes	Yes	Wetland fringes	
Melanitta nigra	Common Scoter	Birds		M	Yes	Yes	Sea, upland lochs	
Miliaria calandra	Corn Bunting	Birds			Yes	Yes	Arable fields	Previously known as Emberiza calandra
Muscicapa striata	Spotted Flycatcher	Birds			Yes	Yes	Woodland edge	
Passer montanus	Eurasian Tree Sparrow	Birds			Yes	Yes	Woodland, farmland, scrub	
Perdix perdix	Grey Partridge	Birds			Yes	Yes	Lowland farmland	
Pyrrhula pyrrhula	Common Bullfinch	Birds			Yes	Yes	Woodland edge	
Sterna dougallii	Roseate Tern	Birds		M	Yes	Yes	Coastal waters, islets	
Streptopelia turtur	European Turtle Dove	Birds			Yes	Yes	Lowland farmland	
Sylvia carruca	Lesser whitethroat	Birds					Scrub	Species Action Plan in 2001 Ayrshire LBAP
Tetrao tetrix	Black Grouse	Birds			Yes	Yes	Upland woodland edge	SNH Species Action List (1),Species Action Plan in 2001 Ayrshire LBAP
Turdus philomelos	Song Thrush	Birds		M	Yes	Yes	Woodland edge	Species Action Plan in 2001 Ayrshire LBAP
Cetorhinus maximus	Basking Shark	Fish	Sharks	M	Yes	Yes	Open sea	
Clupea harengus	Herring	Fish		M	Yes	Yes	Open sea	
Gadus morhua	Cod	Fish		M	Yes	Yes	Open sea bottom	
Merlangius merlangus	Whiting	Fish		M	Yes	Yes	Open sea	
Molva molva	Ling	Fish		M	Yes	Yes	Open sea	
Pleuronectes platessa	Plaice	Fish		M	Yes	Yes	Open sea bottom	
Pollachius virens	Saithe	Fish			Yes	Yes	Open sea	
Hygrocybe calyptriformis	Pink meadow cap	Fungi			Yes	Yes	Established grassland	Species Action Plan in 2001 Ayrshire LBAP
Hygrocybe spadicea	Date-coloured waxcap	Fungi			Yes	Yes	Established grassland	
Colletes floralis	Northern Colletes	Insects	Bees, wasps, ants		Yes	Yes	Sand dunes	
Formica aquilonia	Scottish Wood Ant	Insects	Bees, wasps, ants		Yes	Yes	Ancient woodland	
Aricia artaxerxes	Northern Brown Argus	Insects	Butterflies, Moths		Yes	Yes	Base-rich grassland	Species Action Plan in 2001 Ayrshire LBAP

Taxon	Common name	Group	Subgroup	Marine or maritime species?	Scottish Biodiversity List species?	UK Species Action Plan?	Main habitat(s)	Comments
Rheumaptera hastata	Argent & Sable	Insects	Butterflies, Moths		Yes	Yes	Moorland	
Myotis mystacinus	Whiskered Bat	Mammals	Bats		Yes	Yes	Woodland edge	
Nyctalus noctula	Noctule	Mammals	Bats		Yes	Yes	Woodland with river	
Pipistrellus pipistrellus	Common Pipistrelle	Mammals	Bats		Yes	Yes	Woodland edge	Species Action Plan in 2001 Ayrshire LBAP
Pipistrellus pygmaeus	Soprano Pipistrelle	Mammals	Bats		Yes		Woodland edge	
Lepus europaeus	Brown Hare	Mammals	Rabbits and Hares	M	Yes	Yes	Open farmland	Species Action Plan in 2001 Ayrshire LBAP
Balaenoptera acutorostrata	Minke Whale	Mammals	Whales & Dolphins	M	Yes	Yes	Open sea	
Delphinus delphis	Common Dolphin	Mammals	Whales & Dolphins	M	Yes	Yes	Open sea	
Globicephala melas	Long-finned pilot whale	Mammals	Whales & Dolphins	M	Yes	Yes	Open sea	
Grampus griseus	Risso`s dolphin	Mammals	Whales & Dolphins	M	Yes	Yes	Open sea	
Hyperoodon ampullatus	Northern bottlenose whale	Mammals	Whales & Dolphins	M	Yes	Yes	Open sea	
Lagenorhynchus acutus	Atlantic White-sided Dolphin	Mammals	Whales & Dolphins	M	Yes	Yes	Open sea	
Lagenorhynchus albirostris	White-Beaked Dolphin	Mammals	Whales & Dolphins	M	Yes	Yes	Open sea	
Megaptera novaeangliae	Humpback Whale	Mammals	Whales & Dolphins	M	Yes	Yes	Open sea	
Orcinus orca	Killer Whale	Mammals	Whales & Dolphins	M	Yes	Yes	Open sea	
Phocoena phocoena	Harbour porpoise	Mammals	Whales & Dolphins	M	Yes	Yes	Coastal sea	
Physeter catodon	Sperm Whale	Mammals	Whales & Dolphins	M	Yes	Yes	Open sea	Also known as Physeter macrocephalus
Tursiops truncatus	Bottlenosed dolphin	Mammals	Whales & Dolphins		Yes	Yes	Open sea	
Arvicola terrestris	European Water Vole	Mammals		M	Yes	Yes	Lowland to upland water's edge	SNH Species Action List (1),Species Action Plan in 2001 Ayrshire LBAP
Lutra lutra	European Otter	Mammals		M	Yes	Yes	Rivers	
Sciurus vulgaris	Eurasian Red Squirrel	Mammals			Yes	Yes	Extensive broadleaved or coniferous woodland	SNH Species Action List (1)
Atrina fragilis	Fan Mussel	Molluscs			Yes	Yes	Sheltered sea bottom	SNH Species Action List (1)
Margaritifera margaritifera	Scottish pearl mussel	Molluscs			Yes	Yes	Acidic rivers	
Campylopus setifolius	Silky Swan-neck Moss	Mosses and liverworts	Moss	M	Yes	Yes	Upland heath	
Hamatocaulis vernicosus	Varnished Hook-moss (Slender Green Feather-Moss)	Mosses and liverworts	Moss	M	Yes	Yes	Bogs, fens, flushes	
Caretta caretta	Loggerhead Turtle	Reptiles	Turtles	M	Yes	Yes	Open sea	
Dermochelys coriacea	Leatherback Turtle	Reptiles	Turtles		Yes	Yes	Open sea	
Lepidochelys kempii	Kemp`s Ridley Turtle	Reptiles	Turtles		Yes	Yes	Open sea	
Lycopodiella inundata	Marsh Clubmoss	Vascular plants	clubmoss		Yes	Yes	Wet heath	

Taxon	Common name	Group	Subgroup	Marine or maritime species?	Scottish Biodiversity List species?	UK Species Action Plan?	Main habitat(s)	Comments
Juniperus communis	Juniper	Vascular plants	conifer		Yes	Yes	Upland	
Pilularia globulifera	Pillwort	Vascular plants	fern		Yes	Yes	Pond and lake edges	
Trichomanes speciosum	Killarney Fern	Vascular plants	fern		Yes	Yes	Sheltered damp rock	
Centaurea cyanus	Cornflower	Vascular plants	flowering plant		Yes	Yes	Arable fields	
Fumaria purpurea	Purple Ramping-fumitory	Vascular plants	flowering plant		Yes	Yes	Arable, waste-ground	
Sorbus arranensis	Whitebeam	Vascular plants	flowering plant		Yes	Yes	Upland	
Sorbus pseudofennica	Arran Service-tree	Vascular plants	flowering plant		Yes	Yes	Upland	
Mertensia maritima	Oysterplant	Vascular Plants		M			Coastal shingle	Species Action Plan in 2001 Ayrshire LBAP

Notes

Notes

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