Delivery of the Northern Ireland Biodiversity Strategy

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The second report of the Northern Ireland Biodiversity Group 2005 — 2009



Cover Photograph: Puss Moth Robert Thompson

Delivery Of The Northern Ireland Biodiversity Strategy 2005 - 2009

The second report of the Northern Ireland Biodiversity Group

"The present distribution of plants and animals is a matter of high interest and importance to all students of nature, for it is the heritage of a long past. We see in this present arrangement the result not only of far-extended competition, but of past climates and different distributions of land and sea: and the vicissitudes of the plants and lowly animals throughout the ages have an important bearing on the past migrations and history of man himself."

Robert Lloyd Praeger (The Way That I Went, 1937)

Grasshopper Richard Weyl MARRIER REPORT OF

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Executive Summary & Recommendations

We are roughly half way from 2002, when the Northern Ireland Biodiversity Strategy was signed off, to the 2016 target of halting biodiversity loss. This is the second report on progress towards that target.

NIBG's first report concentrated on the delivery mechanisms for implementing the Northern Ireland Biodiversity Strategy and identified a large number of aspects by which the operation could be improved. Much has taken place since then. The present report devotes one chapter to mechanisms, or components for delivery, and then assesses how each of the original Strategy recommendations has progressed and provides commentary. This is followed by an appraisal of the actual outcomes for biodiversity in Northern Ireland. Finally, NIBG examines the issue of climate change and its importance for biodiversity conservation in Northern Ireland. Throughout the report, NIBG makes recommendations with the aim of improving progress towards Northern Ireland's 2016 target of halting biodiversity loss. Those recommendations are also listed below in this summary.

Key issues that challenge successful implementation of the Strategy are:

- Since the drafting of the Strategy in the late 1990s issues, mechanisms for delivery and understanding of climate change have all advanced significantly. As a result many of its recommendations have been superseded or are not fit for purpose;
- The need for adequate resourcing for biodiversity work this may actually support, or align with, work in complying with statutory requirements;
- The need for accurate monitoring, without which it will be impossible to demonstrate success of the Strategy and review action plans for species and habitats;
- The need to ensure real delivery of actions that make a difference on the ground and in our waters. Throughout our work we have encountered instances where the preparation of plans (many reiterating work scheduled under existing programmes) has not been followed by real results;
- The need to build climate change into all biodiversity work; helping biodiversity to adapt, adjust and survive, which in turn has the potential to be of enormous economic and social benefit to human interests at this time; and
- The need for engagement and drive at all levels of government and local government. Much progress has been made, and this prepares the way for the proposed Biodiversity Duty in the Review of the Wildlife (NI) Order. However, closer engagement is needed, particularly by local authorities in the run-up to the Review of Public Administration (RPA).

In this summary, the report's recommendations are arranged in the following order:

- Cross-cutting recommendations at the highest level which are required throughout all, or many sectors; and
- Recommendations for action by departments, agencies, local authorities and other bodies.

No implication of hierarchy of importance is implied by these definitions. NIBG regards all the recommendations as being essential for adequate delivery of the Northern Ireland Biodiversity Strategy.

Summary Cross-Cutting Recommendations

The need for a complete review of the Northern Ireland Biodiversity Strategy. The present Strategy was signed off in 2002, although drafted in the late 1990s. Because it is over a decade old, it does not reflect the major concerns relating to climate change, current EU policies, rapid changes in the quality of our countryside, recent and imminent administrative changes, nor indeed the achievements that have been made. It also does not reflect today's appreciation of the close links between biodiversity and geodiversity, the increased awareness of the value of ecosystem services, nor the wide range of interdependencies within the environment. Moreover, some of the recommendations are worded so vaguely as to be unmeasurable by today's standards. A major review should be undertaken as a matter of urgency to address the new issues and refine the measures from the old Strategy that are still relevant. Whilst still adhering to the 2016 target, it should be aligned to the UK Biodiversity Strategy Review that will follow the UK's overall target date of 2010.

Other top level issues that require attention if the target is to be achieved:

A strategic review of data requirements of the NI government in complying with legislative, environmental and biodiversity responsibilities. In the preparation of this report, and our attempt to focus on real biodiversity delivery, we were hampered by confusing data on the same subject from different sources, presentation of some data in an almost unusable form and a complete dearth of data relating to priority species - not even baseline data is available for many species. A single, authoritative and accountable source of biodiversity (and other environmental) data, drawing material from inter alia NIEA, DARD, Lough's Agency and other bodies, is an essential requirement if progress is to be demonstrated. We would also regard this as a minimum requirement in demonstrating responsible public spending (see also Section 3.9.2). It may be helpful in the future to establish and define meaningful targets in ways that can be realistically measured, particularly given the likely large number of new NI priority species following the UK Review;

Embodiment of a duty on all public bodies to further the conservation of biodiversity within the revised Wildlife (NI) Order. This is currently under consideration in the context of an overall review. We hope that the present support for this measure will be maintained. It is essential that it is embedded in the business plans of all government and local government bodies in the fulfilment of their functions with complete engagement from senior managers. Following this it is essential that all new legislation, particularly in the context of the Review of Public Administration reflects this duty. Public bodies should not be left without support for their work in meeting this new statutory responsibility. Welcome progress has been made by DoE in delivering support to government departments in the delivery of their Biodiversity Implementation Plans – this should be continued and rolled out to the new suite of local authorities and others:

Adequate resourcing for biodiversity work, based on the requirements of a revised Strategy, undertaken by all public bodies as appropriate. NIBG considers that at present these are inadequate for the task in hand. We recognise that this will be an unpopular recommendation in the current economic climate. However taken with the requirements under the Climate Change Bill (Section 6.3.2), to introduce measures for adaptation to climate change together with the requirement to comply with the Water Framework, Habitats, Birds, Nitrates and other Directives, there is a real opportunity to achieve synergy of measures that would achieve better delivery for biodiversity and responsible allocation of resources. A significant step would also be ensuring the most effective use of existing resources, for example through the Rural Development Programme, EU Fisheries Fund, etc. It is essential that public bodies allocate resources to support their Biodiversity Implementation Plans, though in many cases these do not need to be significant - indeed some may offer savings;

Measures to reduce the impacts of climate change, where possible, and to assist biodiversity in adapting to those aspects of climate change that are unavoidable. Northern Ireland's people and its biodiversity cannot avoid significant climate change impacts – indeed they are already occurring. In many respects the interests of biodiversity and social and economic interests coincide. Biodiversity can also offer ways in which some effects of climate change can be mitigated. Government should establish a working group to address climate change issues in Northern Ireland as proposed in Section 6.5 (its deliberations should cross-reference to the review of the Northern Ireland Biodiversity Strategy proposed above); and

Landscape-scale measures integrating protected sites with restoration of wider habitats. Northern Ireland's suite of protected sites, though still needing further designation and management work, can (together with agri-environment measures) protect our most specialised, vulnerable and localised species and habitats. They should be maintained and strengthened. However, the pressures of wider changes in the countryside, including climate change-induced shifts in habitats and species mean they cannot be regarded as 'islands' of biodiversity separate from the surrounding countryside. Habitats (and therefore many species' distributions) are becoming fragmented due to urbanisation and intensive farming - reflected in data from the NI Countryside Survey. A new landscapescale approach is needed, that integrates the needs of farming and rural communities, site protection and habitat restoration, allowing our landscape and biodiversity to adjust to the pressures of human use and the spatial shifts caused by climate change. A key element of this should be a review of the planning system in the context of the Review of Public Administration.

Northern Ireland's suite of protected sites, though still needing further designation and management work, can (together with agrienvironment measures) protect our most specialised, vulnerable and localised species and habitats.

Summary Recommendations on the Key Components for Delivery (From Chapter 3)

3.2 The Ecosystem Approach

Recommendation 1 NI government should provide guidance for public bodies, setting out a series of clear benchmarks by which policy, legislation and actions can be measured against the principles of the Ecosystem Approach. This should be co-ordinated with the timescales and provisions of the proposed Biodiversity Duty, and the forthcoming Review of Public Administration.

3.3 Policy and Legislation

Recommendation 2 NIBG strongly supports the introduction of a Biodiversity Duty. It is essential that, if passed, it is included in the RPA so that it can be incorporated into the new public authority structures which should be in place by 2011.

Recommendation 3 Ongoing guidance and support should be given to Public Bodies in implementing their responsibilities under the Biodiversity Duty. A significant start on this has been made by DoE (Planning and Environmental Policy Group – see Section 3.4.1).

Recommendation 4 DoE should introduce a NI Marine Bill which includes a strong provision for the designation of a network of Marine Protected Areas.

Recommendation 5 It is essential that a NI Marine Management Organisation (MMO) is established to implement effective coastal and marine management. Until this is in place biodiversity will continue to be lost from both coastal and marine sites due to the lack of suitable legislation, supervision and enforcement. The Marine and Coastal Biodiversity Delivery Group should devote time to ensuring incorporation of measures for marine biodiversity into the work of the MMO.

Recommendation 6 Fisheries Division should publish and consult on their Strategy for inshore fisheries as a matter of urgency and, following this, ensure that measures are put in place without further delay, consistent with the objectives agreed by the Stakeholder Group. Government response published since completion of this Report. **Recommendation 7** The Northern Ireland Executive should give a clear lead by demonstrating its commitment to sustainable development (with biodiversity as a key indicator) by adopting the Sustainable Development Strategy or through its review and future adoption and publication. This should also be a central element to the forthcoming consultations on a revised Shaping our Future.

Recommendation 8 In line with recommendations from the UK Climate Change Committee, the NI government should review present measures to control greenhouse gas emissions and bring Northern Ireland into line with general UK targets, compatible with other UK regions. It should introduce legally binding targets to reduce greenhouse gas emissions by 42% by 2020, relating to 1990 levels.

3.4 Planning and Implementation

Recommendation 9 In order to maintain momentum in the application of Biodiversity Implementation Plans, we propose the following actions:

- Maintain strong Executive/Ministerial support through incorporation of BIPs into departmental performance indicators;
- Workshops and ongoing training provision;
- Guidance materials which are readily accessible to authorities, possibly via some type of intranet;
- Developing partnerships and establishment of a network between NIEA and all other agencies, departments and NGOs to provide support to implementers on relevant biodiversity issues; and
- A formalised and open monitoring programme evaluating implementation. This is likely to be a requirement if the Biodiversity Duty becomes law.

Recommendation 10 That councils and other bodies should be encouraged to take up the offer of grant aid with a view to retaining these officers on a permanent basis particularly as the Review of Public Administration is implemented and the Biodiversity Duty and enhanced planning role for councils comes into play. Councils that have not engaged with this opportunity at all should address this deficiency as a matter of urgency. **Recommendation 11** Following establishment of the Biodiversity Duty and the Review of Public Administration, a more formalised and open programme for monitoring delivery by local authorities, including biodiversity outcomes, should be established.

Recommendation 12 Biodiversity Delivery Groups should ensure through regular review that actions in Habitat and Species Action Plans (HAPs and SAPs) are completed, with a clear focus on real biodiversity outcomes. Groups' performances should be measured by, and directly linked to, conservation status of the priority habitats and species in their remit, and to suitable evaluation of data-deficient species.

Recommendation 13 Government should use preparation of River Basin Management Plans (RBMPs) as a significant opportunity to engage the ecosystem approach. In this context, blanket boglands, floodplains and other wetland habitats have a central role to play in management of the water resource and mitigation of possible flood/drought problems in the future.

3.5 Implementation Tools

Recommendation 14 Government should commission an independent review of the outcomes of Environmental Impact Assessments (EIAs) and their role in protecting biodiversity.

Recommendation 15 The slow progress of many important Planning Policy Statements (PPS) is unacceptable. The delayed PPSs should be completed or revised as appropriate as soon as possible, with priority given to PPS2. All new statements should be subject to Strategic Environmental Assessment (SEA).

Recommendation 16 NIBG strongly supports the introduction of Environmental Management Systems for businesses, provided that biodiversity is included as a key feature. There is a risk however, that most of them are attractive only to the larger organisations and businesses. Particular effort should be devoted to ensuring that enterprises of all scales have an opportunity to participate in a scheme appropriate to their scale and nature.

Recommendation 17 NI Countryside Management Schemes (NICMSs) should be targeted at areas where measures will best support the maintenance and recovery of priority species and habitats and efforts put in place to ensure farmers and landowners are supported to deliver scheme measures effectively through regular advice and training.

3.6 Communication, Awareness and Engagement

Recommendation 18 NIEA should revisit the objectives of its campaign 'In our Nature' and develop a long-term promotion of biodiversity and its value to people, with sustained resourcing. NIBG could assist in the development of this.

Recommendation 19 Council for Curriculum, Examinations and Assessment should issue guidance to teachers explaining the term 'biodiversity' and stressing the importance of its use when delivering relevant aspects of the curriculum.

Recommendation 20 NIEA should reconsider the decisions on funding which have led to the withdrawal of environmental education in many areas, and reinstate a full programme in co-ordination with their other awareness raising work or, alternatively, ensure it is taken up by another suitable body.

3.7 Local Authorities

Recommendation 21 The forthcoming Biodiversity Duty should be a key element of the new council system under the Review of Public Administration.

Recommendation 22 Local authorities, in the context of their Local Biodiversity Action Plans (LBAPs), should prepare for the forthcoming Biodiversity Duty, considering biodiversity in relation to all plans and policies. Guidance should be prepared for local authorities in implementing the Biodiversity Duty.

3.8 Industry and Commerce

Recommendation 23 Government should commission the preparation of biodiversity advice and guidance for all Northern Ireland firms, encouraging the 'partnership approach' between local firms and NGOs to address local biodiversity issues.

3.9 Monitoring, Measurement and Evaluation

Recommendation 24 NIEA should take the lead and co-ordinate the use of Biodiversity Action Reporting Systems (BARS) across NI and provide training to organisations.

Recommendation 25 NIEA should, as a matter of urgency, initiate a review with CEDaR, Quercus and all relevant parties on the baseline and monitoring requirements for Northern Ireland's priority species and habitats, and prepare a programme for obtaining data. This programme should be adequately resourced and reflect three key components of data:

- Compilation of existing data (e.g. in CEDaR, NIEA and DARD) into accessible baseline and trend information;
- Resourcing targeted fieldwork to obtain data not currently available, backed up by a schedule of resurvey as appropriate for each species; and
- Continuing and consolidating the recent progress in mapping seabed topography, marine habitats and documenting marine species. Marine priority species are particularly deficient in adequate data.

The outcome of this work should form a key element in CEDaR's 10 year programme.

3.10 All-Ireland Measures for Biodiversity

Recommendation 26 Northern Ireland government should work with its counterpart in the Republic to prioritise the delivery of management plans on invasive species, ensuring sufficient resourcing and engagement, with establishment of a reporting cycle to monitor progress.

Recommendation 27 NIBG and the Biodiversity Forum should jointly review the delivery and outcomes of the all-Ireland Species Action Plans produced so far, with lead partners identified where necessary. Discussion on future priorities for action plans should take place between these two bodies and with the respective governments.

Summary

Recommendations for Outcomes for Northern Ireland's Biodiversity (From Chapter 5)

5.2 Biodiversity Indicators

Recommendation 28 Government needs to ensure sufficient resources are made available for the designation, monitoring and management of the designated site network, particularly Areas of Special Scientific Interest (ASSIs). This resourcing needs to reflect the increased monitoring and management requirements as new sites are designated.

Recommendation 29 Whilst reporting on designation of ASSIs and Sites of Local Nature Conservation Importance (SLNCIs) is extremely important as a measure of process, it is not an indicator of the 'state of the environment' itself, and therefore cannot be regarded as a biodiversity outcome. It would be better if future State of the Environment (SoE) reports, whilst referring to process matters, focused more closely on the actual biodiversity and environmental outcomes.

Recommendation 30 Significant progress in adoption of SLNCIs is needed, together with their incorporation into Area Plans. Monitoring of their condition, together with measures giving protection from development, need to be established. It is essential that safeguards are built into PPS2 Planning and Nature Conservation. This must be reviewed as soon as possible (recommended above).

Recommendation 31 A consistent format for State of the Environment reports should be developed, enabling comparison between different years and therefore greater clarity on trends in biodiversity conservation.

Recommendation 32 Support should be given to organisations co-ordinating the Breeding Bird Survey in Northern Ireland to increase the number of survey squares recorded and to allow more accurate assessments of scarce or declining species.

5.3 Habitats

Recommendation 33 NIBG recognises that the methodologies for broad-scale and priority habitats are different, but stresses that any means by which the definitions could be brought into alignment would achieve enormous benefits for monitoring. It should be the role of delivery groups, with their specialist knowledge and broad representation, to resolve this for each of their habitats.

Recommendation 34 Particular effort needs to be devoted to resolving the data gaps on many priority woodlands and almost all priority marine habitats.

5.4 Species

Recommendation 35 Any future review or value judgement of the priority species in NI should contain a critique of the quality of the data on which the review is based. Such a critique will highlight areas of greatest data deficiency.

Recommendation 36 NIEA should prioritise actions for priority species that are known to be in decline or at very low population levels.

Recommendation 37 The investment of considerable resources in the development of Species Action Plans must be reviewed to ascertain if it is an effective use of limited resources.

Recommendation 38 All data collection programmes should be reviewed across government departments in an effort to put more focus on priority species, with improved balance between taxa.

5.5 Rare Breeds and Cultivars

Recommendation 39 Without data it is difficult to assess the status of most rare breeds and cultivars. It is therefore impossible to assess progress of this sector towards the 2016 target. A comprehensive monitoring programme should be put in place as soon as possible.

Recommendation 40 It is essential that, as a matter of urgency, DARD fully meet their agreed commitment under Recommendation 62 of the NI Biodiversity Strategy.

Summary

Recommendations on Climate Change and Northern Ireland's Biodiversity (From Chapter 6)

6.3 Climate Change Drivers for Biodiversity Action in Northern Ireland

Recommendation 41 Government should ensure that its actions to address the requirements of the Climate Change Act 2008 include requirements to maintain biodiversity and support its adaptation to the effects of climate change.

Recommendation 42 Particular advice should be given on measures within Biodiversity Implementation Plans (BIPs) to reduce climate change impacts on biodiversity and on opportunities to enhance biodiversity where possible, including the resilience of ecosystems which play a major role in mitigating the consequences of climate change.

6.4 Main Outcomes of the Biodiversity and Climate Change in Ireland Conference

Recommendation 43 Government should use the recommendations from the Biodiversity and Climate Change in Ireland conference as a basis for addressing the impacts of climate change on biodiversity in Northern Ireland, particularly in the context of a working group on climate change (see below).

Recommendation 44 NIBG also recommends the following additional actions:

- Adopt a landscape-scale approach to create robust, diverse and ecologically functional habitats, as supported by the commitments and recommendations in the Northern Ireland Biodiversity Strategy;
- Target habitat creation to buffer habitats from the negative edge effects of intensive land use, and extend the area of habitat rather than simply physically linking them;
- Reduce the release of carbon into the atmosphere by protecting carbon sinks, including particular habitats that maximise this capacity; and
- Government should maintain and further develop its procurement policies to ensure that selection of sustainable materials accounts for reduction and mitigation of climate change impacts.

6.5 Conclusions on Climate Change

Recommendation 45 Government should establish a working group on climate change, responsible for advising on reduction of greenhouse gas emissions and on adaptation to the impacts of climate change.

Recommendation 46 A key remit of a climate change working group should be aiding biodiversity to survive and adapt to our changing climate.

Sea Kelp Nigel Motyer

Chapter 2 Introduction

Northern Ireland Biodiversity Group (NIBG) is a non-statutory steering group established by the Minister for the Environment in 2004 to support and assist the implementation of the Northern Ireland Biodiversity Strategy which had been signed off in 2002.

The role of the Group is to:

- Co-ordinate and monitor implementation of the Northern Ireland Biodiversity Strategy including progress towards agreed species and habitats targets;
- Co-ordinate and monitor the development and implementation of Northern Ireland Action Plans;
- Promote public and business awareness of, and involvement in, biodiversity conservation;
- Explore mechanisms for promoting biodiversity conservation on an all-Ireland basis;
- Participate in any UK biodiversity partnership and the development of UK Action Plans which relate to Northern Ireland; and
- Submit reports to the Executive every three years (the cycle starting with the commencement of the Strategy in 2002) on progress of the implementation of the Northern Ireland Biodiversity Strategy (this has been taken to include the recommendations).

NIBG's first report was submitted to the Minister for the Environment in 2005. It focused on delivery mechanisms because it became clear that much needed to be done on these if implementation of the Strategy was to be effective. Much has taken place since, with many recommendations addressed fully or in part, but significantly not all of the recommendations have been taken up. In 2005 NIBG concluded that it was too soon to come to clear views as to whether actual outcomes for biodiversity were demonstrating real progress but signalled that the next report would focus more on such outcomes.

The present report is, by agreement with the Minister for the Environment, delayed slightly from the three-year cycle in order to incorporate extra information from the State of the Environment report (NI), Biodiversity Indicators and processes in the UK generally. These have been incorporated into Chapter 5 which examines the actual outcomes for Northern Ireland's biodiversity. It is clear that much work has been undertaken to improve delivery mechanisms for biodiversity across departments and agencies and through local authorities. Significant pieces of legislation (for example the reform of the Wildlife (NI) Order with its proposed Biodiversity Duty) are in place or in progress. Biodiversity work has become more focused with establishment of delivery groups specialising in key biodiversity sectors, closer focus by agri-environment schemes, appointment of local biodiversity officers who have prepared local action plans, and almost all departments and agencies have prepared BIPs which is a major step towards complying with any future Biodiversity Duty.

All these developments are extremely welcome and many were recommended in NIBG's first report. However they have yet to demonstrate real outcomes for biodiversity. NIBG remains concerned that whilst getting the mechanisms right is extremely important, it should not be at the expense of real and extra action (above the suite of existing measures). Moreover, whilst biodiversity work need not place heavy demands on resources (indeed can significantly reduce costs in some sectors), NIBG is concerned that insufficient resources are being devoted to the work. This is reflected in the lack of monitoring and even baseline data by which to measure progress of habitats and species, problems with designation and management of key sites, and slow implementation of local action plans.

In terms of actual outcomes for Northern Ireland's biodiversity, the best conclusion at present is equivocal and much action is needed if we are to demonstrate real progress towards halting biodiversity loss, let alone recovery. Some progress has been achieved with the designations for the ASSI network but this work is constrained by a lack of resources while the condition of some features also remains a concern. Whilst some Indicators (e.g. Wild Birds) show encouraging trends, a



lack of data means that progress in some of the rarest and most endangered species is not being assessed. However NIBG is hopeful that the new Countryside Management Scheme operated by DARD, with its focus on priority species and habitats, will offer a significant way forward for farmland biodiversity provided it is backed up by effective monitoring.

A major impediment to demonstrating progress towards the 2016 target of halting biodiversity loss is lack of data. In preparing this report we were compelled to select a sub-sample of only 18 priority species out of a possible 271 because of NIEA's difficulties with extracting meaningful data on a larger sample. Species were chosen on the basis of representativeness of a range of habitats and taxa, presence or absence of action plans and those whose conservation is dependent on habitat management. Most of the 18 'exemplar' species agreed with NIEA were still in decline, variable, or data-deficient. Those that had action plans prepared for them seemed to fare no better than those without. However this may not be an indication of the true picture which may actually be better. The problem is that without

baseline data and monitoring it will be impossible to demonstrate progress.

Climate change will have major impacts on all biodiversity work in Northern Ireland and further afield. Following a joint conference held with the Irish Biodiversity Forum, we have prepared a suite of recommendations for measures to help mitigate the most extreme impacts of climate change and to help biodiversity adapt and survive where possible.

NIBG's final conclusion reflects on the original Strategy prepared in the late 1990s. Notable legislative, administrative and indeed biodiversity changes have taken place since then. The impacts of climate change on biodiversity and our communities will require fresh thinking. NIBG considers that the time is right, given the major UK and EU reviews on biodiversity action that are scheduled for 2010 and after, that the Northern Ireland government undertakes a complete and thorough review of all aspects of the Northern Ireland Biodiversity Strategy.



Chapter 03 The Key Components

3.1 Introduction

Since NIBG's 2005 Report, the number of mechanisms for achieving the Northern Ireland Biodiversity Strategy has increased markedly.

Engagement has expanded from traditional delivery bodies, now other government, voluntary, academic and some business sectors are involved. This has been driven, not only by legislation and greater awareness, but also by access to funding and resources not previously available. Opportunities for partnership have also increased.

This is very welcome. However the key test is whether these mechanisms are delivering the Strategy – in other words whether they have achieved real biological results as opposed to process. Later (Chapters 4 & 5) we conclude that we are a long way from having confidence that the 2016 target of halting biodiversity loss will be achieved. Therefore this chapter assesses the mechanisms presently available for halting biodiversity loss and commencing recovery and recommends improvements. We conclude that government should regard the present state as 'work in progress' and that much needs to be done to consolidate these welcome developments.

Mechanisms and agents for delivery of the Strategy fall into the following categories:

- Policy and legislation;
- Planning and implementation;
- Implementation tools;
- Communication, awareness and engagement;
- Local authorities;
- Industry and commerce;
- Research, monitoring and evaluation;
- All-Ireland measures for biodiversity; and
- Resources and funding.

3.2 The Ecosystem Approach

Central to all the elements above is the Ecosystem Approach, defined in the Convention on Biological Diversity, and recognised by Northern Ireland government – see below.

"A key underlying principle for the conservation of biodiversity is the Ecosystem Approach, defined by the Convention on Biological Diversity as a strategy for the integrated management of land, air, water and living resources that promotes conservation and sustainable use in an equitable way, and which recognises that people with their cultural and varied social needs are an integral part of ecosystems. The CBD sets out some principles for this type of approach (see below as set out by Defra). Climate change and other environmental changes, underline the need for a long-term, ecosystem-based approach. Not only will habitats and species be affected directly by climate change and sea level rise but, probably as significant, they will also be affected by policy and behavioural shifts in other sectors such as agriculture, water, transport and energy. This is a long-term agenda, requiring a more sophisticated understanding of the value of ecosystem services and the relationship between economic and environmental performance, as shown in the Millennium Ecosystem Assessment."

From Conserving Biodiversity -

the UK Approach (October 2007) signed by UK Ministers, including Northern Ireland Minister for Environment, Arlene Foster.

"Core principles:

- Taking a more holistic approach to policymaking and delivery, with the focus on maintaining healthy ecosystems and ecosystem services;
- Ensuring that the value of ecosystem services are fully reflected in decision-making;
- Ensuring environmental limits are respected in the context of sustainable development, taking into account ecosystem functioning;
- Taking decisions at the appropriate spatial scale while recognising the cumulative impacts of decisions; and
- Applying adaptive management of the natural environment to respond to changing pressures, including climate change."

From Securing a healthy natural environment: an action plan for embedding an ecosystems approach (Defra, December 2007). Discussions with government representatives, voluntary groups, local authorities and others have revealed some confusion as to what the principles of the ecosystem approach actually mean in terms of working practices. NIBG recognises this and stresses that the ecosystem approach is essential if biodiversity is to be restored on a truly sustainable basis. It is also a fundamental requirement in supporting biodiversity in the context of climate change (see Chapter 6).

Recommendation 1 NI government should provide guidance for public bodies, setting out a series of clear benchmarks by which policy, legislation and actions can be measured against the principles of the Ecosystem Approach. This should be co-ordinated with the timescales and provisions of the proposed Biodiversity Duty, and the forthcoming Review of Public Administration.

3.3 Policy & Legislation

Significant progress in developing legislation has been made since the last report, both on a Northern Ireland-wide and local basis. The most important developments that affect our biodiversity since our last report include:

• Review of the Wildlife Order (currently in draft) - NIBG recommended this measure in 2005. A statutory duty on all public bodies (e.g. government departments, their agencies and local authorities) to further the conservation of biodiversity, consistent with the performance of their duties, is proposed. This legislation should significantly extend and deepen the commitment to conserve biodiversity in all public bodies. It also includes reform of the Game Acts, amendments to the Environment Order, regulations banning the use of lead shot over wetlands and improvements to the Habitats Directive transposition, all of which could have benefits for biodiversity.

Recommendation 2 NIBG strongly supports the introduction of a Biodiversity Duty. It is essential that, if passed, it is included in the RPA so that it can be incorporated into the new public authority structures which should be in place by 2011.

Recommendation 3 Ongoing guidance and support should be given to Public Bodies in implementing their responsibilities under the Biodiversity Duty. A significant start on this has been made by DoE (Planning and Environmental Policy Group – see Section 3.4.1).

- Implementation of the Water Framework Directive, with its requirement for good ecological status, is driving preparation of River Basin Management Plans (see Section 3.3.4). Three of these operate on a cross-border basis because of shared catchments. NIBG strongly supports implementation of the Directive but has concerns about the present state of the draft plans; it looks likely to incorporate existing practice while offering little in the way of new measures.
- NIBG welcomes the introduction of the draft UK Marine Bill and the preparatory work on an Assembly Bill to address devolved issues. Biodiversity issues have been taken into account and will be addressed largely through marine spatial planning and the development of Marine Protected Areas. The adoption of Integrated Coastal Zone Management (ICZM) and the work of the Northern Ireland Coastal and Marine Forum must ensure that maritime biodiversity is treated as primary issue.

Recommendation 4 DoE should introduce a NI Marine Bill which includes a strong provision for the designation of a network of Marine Protected Areas.

Recommendation 5 It is essential that a NI Marine Management Organisation (MMO) is established to implement effective coastal and marine management. Until this is in place biodiversity will continue to be lost from both coastal and marine sites due to the lack of suitable legislation, supervision and enforcement. The Marine and Coastal Biodiversity Delivery Group should devote time to ensuring incorporation of measures for marine biodiversity into the work of the MMO. Review of Fisheries. DARD Fisheries Division undertook a detailed consultation on Northern Ireland fisheries as part of the UK's Net Benefits consultation on a sustainable and profitable future for UK fishing. Following this in September 2005, a further consultation took place reviewing inshore fisheries management in Northern Ireland and reported in January 2007. This review was very welcome, incorporating a wide range of interests and fishery sectors and recommending overarching objectives relating to knowledge and data, the ecosystem approach, management structures, legislation review, resources to achieve recommendation and improved communication. It is now well over two years since this report was published and whilst the Fisheries Division BIP refers to production of a Strategy in 'early 2009', NIBG has not seen any external evidence of progress in delivering this, or in convening its Stakeholder Group. This is regrettable given the thoroughness of the consultation, the willingness of disparate parties to co-operate in making recommendations and, in particular, because of continuing threats to marine biodiversity from fishery operations.

Recommendation 6 Fisheries Division should publish and consult on their Strategy for inshore fisheries as a matter of urgency and, following this, ensure that measures are put in place without further delay, consistent with the objectives agreed by the Stakeholder Group. *Government response published since completion of this Report.*



• The Northern Ireland Miscellaneous Provisions Act 2006 placed a statutory duty on all public authorities to have regard to any strategy or guidance in relation to sustainable development - this is seen as an initial (but not complete) step in embedding the Biodiversity Strategy into the business plans of public bodies. The NI Sustainable Development Plan imposed duties on all government departments and agencies to produce Biodiversity Implementation Plans as recommended by NIBG in 2005 (see Section 3.3.1 for further details). Lack of discernable progress on the Memorandum of Understanding between the Sustainable Development Commission and NI Executive is a worrying indication of the lack of weight given to this issue by politicians. As is the failure to appoint a new Sustainable Development Commissioner since April 2008. On a more positive note a new SD Strategy for NI, in the form of an enabling statement, has been written and is awaiting approval by ministers.

Recommendation 7 The Northern Ireland Executive should give a clear lead by demonstrating its commitment to sustainable development (with biodiversity as a key indicator) by adopting the Sustainable Development Strategy or through its review and future adoption and publication. This should also be a central element to the forthcoming consultations on a revised Shaping our Future.

• To counter the trend of increasing greenhouse gas emissions in the majority of states who agreed the Kyoto protocol. The European Union has set targets for all Member States – currently 20% reduction by 2020. Each Member State however has discretion as to how it allocates its emissions reductions within its regions. It is allowed to tolerate higher levels of pollution in one area by ensuring that another area is particularly low. The Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland 1996-2000 were produced in September 2008. The report concludes that Northern Ireland has reduced greenhouse gas emissions by less than any other area within the UK and in several important categories emissions are actually rising dramatically.

Recommendation 8 In line with recommendations from the UK Climate Change Committee, the NI government should review present measures to control greenhouse gas emissions and bring Northern Ireland into line with general UK targets, compatible with other UK regions. It should introduce legally binding targets to reduce greenhouse gas emissions by 42% by 2020, relating to 1990 levels.

3.4 Planning & Implementation

3.4.1 Biodiversity Implementation Plans (BIPs)

BIPs are action plans for biodiversity, ensuring the Biodiversity Strategy is supported consistent with the functions of each public body. They are based on recommendations within the Northern Ireland Biodiversity Strategy and the EU Biodiversity Communiqué of 2006. NIBG recommended preparation of these plans in its 2005 report.

To assist government departments and agencies, a Biodiversity Development Officer was appointed in May 2006 by the Planning and Environmental Policy Group (PEPG) of DoE. In addition to securing support at senior level within each department, training, support and awareness-raising were carried out for relevant staff. BIPs were largely completed by December 2008. In order to monitor the actions contained in the BIPs and to evaluate their effectiveness, all departments are required to report annually to the Head of the Civil Service.

NIBG strongly welcomes the development of these plans, and commends the commitment of PEPG and the Biodiversity Development Officer in achieving the present result. In addition to the annual reporting, NIBG wish to undertake a review of their relevance, effectiveness and outcomes during our next reporting cycle.

Recommendation 9 In order to maintain momentum in the application of Biodiversity Implementation Plans, we propose the following actions:

- Maintain strong Executive/Ministerial support through incorporation of BIPs into departmental performance indicators;
- Workshops and ongoing training provision;
- Guidance materials which are readily accessible to authorities, possibly via some type of intranet;
- Developing partnerships and establishment of a network between NIEA and all other agencies, departments and NGOs to provide support to implementers on relevant biodiversity issues; and
- A formalised and open monitoring programme evaluating implementation. This is likely to be a requirement if the Biodiversity Duty becomes law.

3.4.2 Local Biodiversity Action Plans (LBAPs)

To support the delivery of biodiversity action at a local level, EHS/NIEA initially offered 75% funding for district councils and other bodies to appoint a Biodiversity Officer on a three year contract. Of the existing 26 district councils, 13 have availed of funding from the NIEA. Currently there are eight LBAP Officers in post.

Eight councils secured the funding directly: Antrim, Belfast, Newtownabbey, Dungannon and South Tyrone, Craigavon, Derry, Larne and Moyle.

Currently three of these officers are permanent and five have funding until 2010/2011. Five councils entered a partnership with the Ulster Wildlife Trust. Four of these posts are now vacant in their last year of funding (Coleraine, Banbridge, Omagh and Fermanagh) with one officer in post (Newry and Mourne) with funding until 2010. Four of these councils have however applied for future funding from NIEA and have brought in new councils as partners, such as Coleraine linking in with Limavady and Ballymoney. The remaining 13 councils did not avail of NIEA funding and have no Biodiversity Officer in place.



Table 1 outlines the status of LBAP	^o Officers across Northern Ireland.
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LBAP Officers	Status	Comment
Antrim Borough Council	Employed by Antrim Borough Council; position permanent.	Fully funded by Antrim Borough Council.
Belfast City Council	Employed by Belfast City Council; position permanent.	Fully funded by Belfast City Council.
Newtownabbey Borough Council	Employed by Newtownabbey Borough Council; position permanent.	Fully funded by Newtownabbey Borough Council.
Banbridge District Council	Employed through UWT. Position vacant since January 2008. Funding for this post is no longer available.	New council-led application submitted to NIEA in Sept 2008 for 1 Biodiversity Officer for Banbridge and Armagh 2009-2013. Awaiting outcome.
Coleraine Borough Council	Employed through UWT. Position vacant since January 2009. Funding for this post is no longer available.	New council-led application submitted to NIEA in Sept 2008 for 2 Biodiversity Officers for Limavady, Ballymoney and Coleraine 2009-2013. Awaiting outcome.
Craigavon Borough Council	Employed by Craigavon Borough Council as a "Conservation Officer" on a council contract. Contract 2008- 2011.	Biodiversity Officer 75% funded by NIEA whereas Conservation Officer is 50% grant aided by NIEA.
Derry City Council	Employed by Derry City Council; contract from 2008-2010.	Application to NIEA submitted in Sept 2008 for Biodiversity Officer for Derry and Strabane 2009-2013. Awaiting outcome; any award will be deferred to 2010.
Larne Borough Council and Moyle District Council	Employed by Larne and Moyle Councils; contract from 2007-2010.	75% grant aided by NIEA.
Dungannon and South Tyrone Bor- ough Council	Employed by Dungannon and South Tyrone Borough Council; contract from 2008-2012.	75% grant aided by NIEA.
Fermanagh District Council	Employed through UWT. Position vacant since September 2008. Funding for this post no longer available.	Funding of 50% was offered in 2008/09 for 1 Biodiversity Officer. The council is now exploring a partnership with Omagh District Council whereby they will obtain 75% funding for one shared officer.
Omagh District Council	Employed through UWT. Position vacant since January 2009. Funding for this post no longer available.	See above.
Newry and Mourne District Council	Employed through UWT. Contract until 2010.	75% grant aided by NIEA.

To date LBAPs have been produced for ten local councils: Antrim Borough Council, Banbridge District Council, Belfast City Council, Coleraine Borough Council, Craigavon Borough Council, Derry City Council, Fermanagh District Council, Newtownabbey Borough Council, Newry and Mourne District Council and Omagh District Council. A further two councils will have LBAPs produced in due course; Dungannon and South Tyrone Borough Council and Moyle District Council.

In addition to district council LBAPs, Biodiversity Action Plans have been produced by some of the environmental NGOs: the Quarry Products Association, Translink, the Mourne Heritage Trust and the Lough Neagh and Lower Bann Advisory Committee. One of these, Translink, was implemented independently of NIEA funding.

Overall the production of LBAPs has been a positive move. To date only those officers who were employed and part-funded (25%) by district councils have been retained beyond their initial three year funding from NIEA. None of the joint council/UWT posts have resulted in the permanent retention of Biodiversity Officers within councils. This has resulted in the delivery of LBAPs being stalled or in a situation where they may not even be implemented due to a lack of resources within councils. However it should be noted that without the UWT such plans would not have been produced at all.

Recommendation 10 That councils and other bodies should be encouraged to take up the offer of grant aid with a view to retaining these officers on a permanent basis particularly as the Review of Public Administration is implemented and the Biodiversity Duty and enhanced planning role for councils comes into play. Councils that have not engaged with this opportunity at all should address this deficiency as a matter of urgency.

Recommendation 11 Following establishment of the Biodiversity Duty and the Review of Public Administration, a more formalised and open programme for monitoring delivery by local authorities, including biodiversity outcomes, should be established.

3.4.3 Species and Habitat Action Plans

All of the UK priority habitats and species that occur in Northern Ireland are automatically selected as priorities, resulting in 38 priority habitats and 271 priority species. However conservation priorities for habitats in Northern Ireland are not always the same as those applying to the UK as a whole. There are habitats, which, because of their status in Northern Ireland or in Ireland as a whole, attract particular attention even though they are not priority habitats in the UK context. Criteria for these are:

- Local rarity or high rate of decline within NI and Rol;
- High percentage of UK and Irish populations (10% and 50% respectively); and
- Habitats which are of particular importance for priority species.

The UK list of priority species and habitats has recently been reviewed. From this list 168 extra species and 40 extra habitats that occur in NI will need to be addressed by the relevant biodiversity delivery groups. The annual target set by NIEA for completion of the relevant action plans is 20 per year until 2016. To date, 34 SAPs and 38 HAPs have been produced and in addition, there are seven all-Ireland SAPs, produced in partnership with the authorities in the Republic of Ireland. From this, it is clear that many habitats and an enormous number of species will lack action plans for a long time under the present system, possibly well beyond the 2016 target. The solution to the problem, developed on a UK basis, is to 'brigade' species into key habitats – discussed below.

A system of biodiversity delivery groups was established to ensure effective co-ordination and delivery. Subsequently the UK Biodiversity Partnership Standing Committee recommended a similar system whereby habitats were to be 'brigaded' into groupings and Habitat 'Umbrellas' or delivery groups for each of the UK countries.

In Northern Ireland, groupings are addressed by the following Biodiversity Delivery Groups:

- Wetlands Biodiversity Delivery Group;
- Farmland Biodiversity Delivery Group;
- Northern Ireland Native Woodland Group;
- Peatlands and Upland Biodiversity Group;
- Coastal and Marine Biodiversity Delivery Group;
- And in addition, there is a Northern Ireland Species Delivery Group.

The remit of these groups includes the co-ordination of arrangements for monitoring and reporting on habitats in the context of the BAPs, co-ordinating activity on the habitats, identifying and supporting research needs, considering cross-border management issues and providing biodiversity advice to government.

The next stage is the 'brigading' of species into their priority habitats. This work is currently underway, following the recent review of UK priorities, and will probably be complete in the middle of 2009. We recognise (see above) that to produce action plans for all species would be lengthy, burdensome and impractical, so in future most species will have basic measures assigned to them; a process known as 'signposting'.

We welcome the focus provided by delivery groups for their priority habitats and species. It is essential that the time and effort devoted to this does not outweigh that given to real actions that deliver biological outcomes, and that the groups do not merely restate actions that are already scheduled elsewhere. There is a risk that in establishing these groups another layer of discussion and bureaucracy will be created. However the converse is that if structured correctly with the right focus, they could be real drivers for biodiversity outcomes adding real value to the process. At this stage however, we have not detected such outcomes from this mechanism because the co-ordination and drive for action is not yet happening.

Recommendation 12 Biodiversity Delivery Groups should ensure through regular review that actions in Habitat and Species Action Plans (HAPs and SAPs) are completed, with a clear focus on real biodiversity outcomes. Groups' performances should be measured by, and directly linked to, conservation status of the priority habitats and species in their remit, and to suitable evaluation of data-deficient species.

3.4.4 River Basin Management Plans (RBMPs)

These are driven by the EC Water Framework Directive (WFD) which identifies NIEA as the body responsible for co-ordinating the river basin management planning process, including drafting and consultation. Other departments share in the process, namely DCAL, DARD and DRD. Management plans will seek to promote sustainable water use while at the same time protecting and improving the water environment, with the key aim being to secure good ecological status for all water bodies by 2015. Because Northern Ireland and the Republic share three River Basin Districts, lead agencies from both the North and South are working closely together. A NI Stakeholder Forum has been set up and consultation will engage with the general public in developing the plans.

The plans should support biodiversity significantly and aim to achieve good ecological status in a bid to address biodiversity loss. However at present the draft plans compile existing programmes and requirements, but contain little in the way of new measures and lack catchment-scale measures to support the ecosystem services, for example those provided by upland bogs and lowland floodplains. In that respect the current draft plans do not adequately embrace the ecosystem approach.

There is also a requirement under the WFD to achieve favourable conservation status for all waterdependent Natura 2000 sites by 2015. NIEA should continue to prioritise these sites within the ASSI network which has a general target of favourable conservation status by 2016.

Recommendation 13 Government should use preparation of River Basin Management Plans (RBMPs) as a significant opportunity to engage the ecosystem approach. In this context, blanket boglands, floodplains and other wetland habitats have a central role to play in management of the water resource and mitigation of possible flood/drought problems in the future.



3.5 Implementation Tools

3.5.1 Strategic Environmental Assessment (SEA)

SEA is required prior to approval of major infrastructure projects, plans and policies. Although this process takes biodiversity into account, it is still in its infancy and is largely untested within Northern Ireland. The publication Strategic Environmental Assessment and Biodiversity: Guidance for Practitioners, published by the Countryside Council for Wales, English Nature, the Environment Agency and the RSPB in June 2004 could be used as useful initial guidance, given the lack of any other material in Northern Ireland.

3.5.2 Environmental Impact Assessment (EIA)

EIA is a requirement of most significant developments but although it has been widely implemented, NIBG Members consider that the experience to date suggests inconsistent application and serious failings in the recognition of biodiversity requirements and solutions. There are no clear feedback mechanisms or any common standards by which EIAs are judged. It is also essential that the mitigation measures proposed in these assessments are enforced and properly monitored.

Recommendation 14 Government should commission an independent review of the outcomes of Environmental Impact Assessments (EIAs) and their role in protecting biodiversity.

3.5.3 Planning Policy Statements (PPS)

Planning Policy Statements are gradually replacing the policy provision of the Planning Strategy for Rural Northern Ireland. Planning Policy Statements are used in the assessment of planning proposals for development and in the preparation of area plans. All of the PPSs, because they are related to proposed development, may impact to some extent on biodiversity. Those that are most relevant are:

- PPS2 Planning and Nature Conservation (1997)

 Currently under review, much delayed. NIBG
 recommended urgent completion of this in 2005 and
 it is extremely disappointing to note such a delay
 within the context of the NI government's professed
 commitment to biodiversity targets;
- PPS15 Planning and Flood Risk (2006);
- PPS19 Mineral Extraction Held back;
- PPS20 Coastal Planning In 2005 NIBG urged completion of this Held back; and
- PPS21 Sustainable Development in the Countryside Currently in draft.

Recommendation 15 The slow progress of many important Planning Policy Statements (PPS) is unacceptable. The delayed PPS's should be completed or revised as appropriate as soon as possible, with priority given to PPS2. All new statements should be subject to Strategic Environmental Assessment (SEA).

With new Regional Development and Transport Strategies being developed and probably a Planning White Paper soon, there will be a major opportunity to create a system that secures sustainable development, is sympathetic to biodiversity and can even deliver biodiversity objectives.

3.5.4 Environmental Management Systems (EMS)

Environmental Management Systems are extensively deployed throughout larger commercial and government organisations and increasingly within SMEs (Small to Medium-sized Enterprises). These do not specifically target biodiversity, however they require environmental aspects to be identified and managed. If biodiversity is identified as a significant aspect the system requires objectives and targets to be set. Larger organisations (including government departments) are increasingly requiring supply chain organisations to be certified. The most common systems are:

- Green Dragon (ARENA), Acorn (IEMA), etc.;
- ISO 14001;
- EMAS (Eco-Management and Audit Scheme);
- OFMdFM Policy Toolkit;
- BS8555 suitable for smaller companies; and
- Biodiversity Benchmark this process, developed by the Wildlife Trusts, is an accreditation process based on and consistent with EMS models. The benchmark recognises a structured approach to managing biodiversity within an organisation. An introductory workshop is to be held during April 2009 and it is hoped that the first Northern Ireland organisations will be accredited during 2010.

Recommendation 16 NIBG strongly supports the introduction of Environmental Management Systems for businesses, provided that biodiversity is included as a key feature. There is a risk however, that most of them are attractive only to the larger organisations and businesses. Particular effort should be devoted to ensuring that enterprises of all scales have an opportunity to participate in a scheme appropriate to their scale and nature.

3.5.5 Agri-Environment Schemes (AES)

Roughly 80% of Northern Ireland's land surface is dominated by some form of agricultural activity. The 20th Century saw major changes in agricultural practices, particularly in intensification of production, resulting in an enormous loss of biodiversity. The introduction of EU supports for production served to exacerbate this trend. Recent years have seen an EU shift in emphasis towards environmental measures designed to ameliorate the most severe impacts on biodiversity and other aspects of agricultural land, but we are still left with a landscape holding a fragmented and depleted assembly of species and habitats. Agri-environment schemes, operating since 1988 by DARD, saw a rapid expansion through the Countryside Management Scheme. Almost 540,000ha were under agri-environment agreements in 2007. The new Northern Ireland Countryside Management Scheme (NICMS) was opened for applications in 2008. Within the NI Programme for Government the DARD target is to have 50% of agricultural land covered by environmental enhancement agreements by 2013 (see also Section 5.3.3 for biodiversity outcomes relating to agri-environment schemes).

Recommendation 17 NI Countryside Management Schemes (NICMSs) should be targeted at areas where measures will best support the maintenance and recovery of priority species and habitats and efforts put in place to ensure farmers and landowners are supported to deliver scheme measures effectively through regular advice and training.



3.5.6 Site Designation and Management

Site protection through designation and management is one of the key mechanisms by which specialised, localised and vulnerable species and habitats can be maintained. The core of the system is the designation of Areas of Special Scientific Interest (ASSIs) which in addition to safeguarding species, habitats and geological features of Northern Ireland importance, also underpin the EU Natura 2000 designations of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). At a local level, Sites of Local Nature Conservation Importance (SLNCIs) may be designated in area development plans.

As all these designations are an environmental indicator in the State of the Environment Report, they are discussed in Sections 5.2.1–5.2.3. However it is clear that the process of designation is considerably delayed; only the suite of Natura 2000 sites, with the compulsion of EU legislation, are near completion.

The unfavourable condition of such a large number of habitat features within the network also demands immediate attention to reduce further biodiversity loss and secure recovery.

3.6 Communication, Awareness & Engagement

The focus has been primarily on raising awareness within central and local government (via BIPs, LBAPs and other measures – discussed above) and the agricultural sector (via NICMS and other mechanisms) with significant work also done in the context of the revised Northern Ireland Curriculum. NIEA have also undertaken work raising awareness in the general public. This section comments on general awareness and education.

3.6.1 Public Awareness

NIBG's 2005 Report (Section 13) recommended a campaign to build awareness of biodiversity. In 2006, NIEA mounted a major campaign with the strap line Biodiversity – it's in our Nature. The use of cartoon characters made this very popular with children and as an educational resource in schools and community groups. The biodiversity logo was promoted and offered as a symbol to any individuals or organisations that wished their work to be identified with support for biodiversity. A follow-up survey demonstrated increased public awareness from 24% (May 2006) to 29% (December 2007). The campaign has now concluded, although NIEA use other outlets for promotion of biodiversity including country parks, publications and occasionally press statements on key issues/events.

NIBG was strongly supportive of the campaign, participated in workshops aimed at fine-tuning the messages and welcome the outcome. However, we regret the fact that (despite our advice to the contrary) the campaign was concluded for practical and resource reasons. Our view is that long-term awareness cannot be achieved by one-off campaigns. Instead consistent, long-term promotion is needed. The recent news that a further campaign may be initiated is therefore a welcome step and we hope that it will be implemented on a longer-term basis.

We welcome other initiatives that have been developed independently aimed at raising public awareness. For example, Translink have been running a poster campaign in stations advertising the importance of biodiversity (see www.translink.co.uk/biodiversity .asp).

Recommendation 18 NIEA should revisit the objectives of its campaign In our Nature and develop a long-term promotion of biodiversity and its value to people, with sustained resourcing. NIBG could assist in the development of this.



3.6.2 The Northern Ireland Curriculum

The current revised NI Curriculum introduced in September 2007, being rolled out until 2010, includes many elements which will allow the environmental education sector to engage with teachers and pupils and help them gain a better appreciation of environmental, sustainable development and biodiversity issues.

Historically, environmental education has been carried out in schools by organisations covering primarily the science and geography curriculum. Much good work was also achieved through EMU (Education for Mutual Understanding) projects which provided the funding for schools to visit environmental centres and learn about species and habitats whilst covering community relation issues.

Under the revised curriculum there are opportunities for learning about local biodiversity and for external agencies to engage with schools to facilitate this happening. Citizenship and Education for Sustainable Development (ESD) are key curriculum objectives while there are many other areas of the curriculum that connect and support the teaching of biodiversity issues.

The World around Us is a new 'Learning Area' of the curriculum and incorporates the subjects of Science, Geography and History at Key Stage 1 and 2. Connections to biodiversity will be made through elements such as:

- Identifying similarities and differences between living things, places, objects and materials;
- Being aware of the local natural and built environment and their place in it;
- Understanding the need to respect and care for themselves, other people, plants, animals and the environment; and
- Understanding that some things change over time.



This holistic approach is very welcome. However we are concerned that the term 'biodiversity' is not used at all throughout the text and it is therefore unlikely that teachers will use it. Whilst some may regard this as merely a jargon issue, the fact remains that the term is in international use and is frequently applied as a core element of the very topics that The World around Us addresses. Pupils wishing to engage in serious debate about these issues will be disadvantaged if they are not familiar with the term. **Recommendation 19** Council for Curriculum, Examinations and Assessment should issue guidance to teachers explaining the term 'biodiversity' and stressing the importance of its use when delivering relevant aspects of the curriculum.

3.6.3 Teacher Training

The Environmental Education Forum (EEF) is the main networking organisation within Northern Ireland for groups providing biodiversity education (as well as other aspects of the environment and sustainable development) to a range of target audiences. It works with approximately 95 Members in developing a co-ordinated approach to the delivery of biodiversity education by providing newsletters, networking opportunities and events and activities which encourage involvement in biodiversity within and outside the classroom. A key element of this is the 'Education for Sustainable Development' days at all of Northern Ireland's teacher training establishments. Many of the workshops are biodiversity based and are run by organisations such as the RSPB, UWT, National Trust, Forest Service, Colin Glen Trust, etc.

3.6.4 Resourcing in NIEA for Environmental (and Biodiversity) Education

NIBG has learnt with concern about the recent restriction of resources for this work. NIEA with its well qualified staff, excellent facilities including country parks and wildlife centres should be a major player in this field. The need for this work is widely acknowledged. If it is not seen as being within NIEA's remit, this work should be taken up by another suitable body, for example Department of Education.

Recommendation 20 NIEA should reconsider the decisions on funding which have led to the withdrawal of environmental education in many areas, and re-instate a full programme in co-ordination with their other awareness raising work or, alternatively, ensure it is taken up by another suitable body.

3.7 Local Authorities

We have covered the development of LBAPs in Section 3.4.2. In addition to this, local authorities own substantial amounts of land, including parks and open spaces. Several councils own land which is designated and/or contains priority habitats and species and all will have sites of local interest and importance. It is essential that local authorities recognise the importance of biodiversity and ensure that it is promoted at a local level.

A questionnaire was sent to all local councils, with just over half responding. It is clear that in general, local authorities recognise the importance of biodiversity, especially in terms of the following benefits:

- Increasing 'ownership' and awareness of sites and local species;
- Encouraging partnerships and community engagement;
- Contributing to tourism product;
- Promoting healthy lifestyles and activity; and
- Helping to deliver sustainable development targets.

Unfortunately, some local authorities appear to regard biodiversity as an option rather than a necessity and feel that it is primarily the responsibility of central government. The introduction of the statutory Biodiversity Duty and increasing number of Local Biodiversity Action Plans should help to dispel this attitude.

Recommendation 21 The forthcoming Biodiversity Duty should be a key element of the new council system under the Review of Public Administration.

Recommendation 22 Local authorities, in the context of their Local Biodiversity Action Plans (LBAPs), should prepare for the forthcoming Biodiversity Duty, considering biodiversity in relation to all plans and policies. Guidance should be prepared for local authorities in implementing the Biodiversity Duty.

3.8 Industry & Commerce

There has been very limited engagement by and with industry to date and, with some notable exceptions, biodiversity has not yet been recognised as a significant issue within this sector in Northern Ireland. There are many ways in which businesses can make a contribution, including ensuring that they understand and manage their impact on biodiversity through developing biodiversity policies, integrating it into their Environmental Management Systems, getting involved in wider initiatives such as conservation projects with LBAP Officers, communicating the biodiversity message to employees and customers and mitigating their overall impact on biodiversity through site action. A significant lead has been shown by the transportation, utilities, guarrying and construction industries. Translink (Biodiversity Project) and the Quarry Products Association NI (QPANI) have both engaged with Biodiversity Officers and developed Biodiversity Action Plans that have raised general awareness within their spheres of influence and resulted in physical projects targeted at vulnerable species and habitats.



Involvement to date has been dominated by the larger corporate organisations with structured Corporate Social Responsibility and sponsorship programmes. There is now a need to involve the vast majority of SMEs.

Extension of the Biodiversity Benchmark scheme (see Section 3.5.4) to Northern Ireland will raise the profile of biodiversity within the industrial sector and provide a structured framework for industry and commerce to manage biodiversity issues. This should be strongly encouraged, particularly with larger organisations with significant land holdings and estate management functions. Local Biodiversity Officers could have a key role in this respect. Awareness of biodiversity has been raised through locally sponsored awards such as the Sustainable Ireland Biodiversity Project of the Year which is now in its third year and has recently attracted entries from the private sector.

Recommendation 23 Government should commission the preparation of biodiversity advice and guidance for all Northern Ireland firms, encouraging the 'partnership approach' between local firms and NGOs to address local biodiversity issues.

3.9 Monitoring, Measurement & Evaluation 3.9.1 Biodiversity Action Recording System (BARS)

BARS is currently the main central UK system for recording actions on biodiversity, although biodiversity delivery groups record and monitor their work and the outcomes of their Action Plans. 35 NI HAPs and 21 (out of the 33) SAPs are incorporated into BARS. Unfortunately in NI there is limited use of BARS. This is probably due to the long roll-out time for the system and the lack of a co-ordinated approach. Input of data from NIEA grant-aided projects into BARS is a condition of funding. However without a co-ordinated approach there is a major risk of duplication with projects being input by a number of partners.

Recommendation 24 NIEA should take the lead and co-ordinate the use of Biodiversity Action Reporting Systems (BARS) across NI and provide training to organisations.

3.9.2 Centre for Environmental Data and Recording (CEDaR)

CEDaR was set up in 1995 in the Ulster Museum, supported by EHS/NIEA, as the local records centre for Northern Ireland. It has the potential to establish sound baseline information for SAPs, for monitoring trends in conservation status and for producing LBAP inventories. In NIBG's 2005 report (Section 7.1.3) we recommended that CEDaR prepare an implementation plan that focused on biodiversity priorities. Whilst they have reviewed their work (and are currently preparing a 10 year plan), there is little evidence at present that their work directly supports these priorities. In Chapter 5 we review actual biological outcomes from the limited data made available to us. Here, evaluating the process and recognising the pressure on NIEA resources, we reiterate that the lack of baseline data together with inadequate monitoring, is an increasing problem in measuring progress. In 2005 we recommended that "EHS [now NIEA], with CEDaR and Quercus, and with lead BAP partners as appropriate, should undertake review of monitoring work to ensure it is meeting the needs of Action Plan delivery, and best use of resources" (Section 10.3 of the 2005 report). This has not been done. We can only conclude that irrespective of the efforts of government and nongovernment workers, we may arrive at the target date, 2016, without knowing whether the Strategy has worked or not, particularly in respect to significantly slowing biodiversity loss by 2010 (Programme for Government 2008-11). This is unacceptable, even in basic terms of government accountability for resource use.

Recommendation 25 NIEA should, as a matter of urgency, initiate a review with CEDaR, Quercus and all relevant parties on the baseline and monitoring requirements for Northern Ireland's priority species and habitats, and prepare a programme for obtaining data. This programme should be adequately resourced and reflect three key components of data:

- Compilation of existing data (e.g. in CEDaR, NIEA and DARD) into accessible baseline and trend information;
- Resourcing targeted fieldwork to obtain data not currently available, backed up by a schedule of resurvey as appropriate for each species; and
- Continuing and consolidating the recent progress in mapping seabed topography, marine habitats and documenting marine species. Marine priority species are particularly deficient in adequate data.
- The outcome of this work should form a key element in CEDaR's 10 year programme.

3.10 All-Island Measures for Biodiversity

Nature does not recognise national frontiers, so many aspects of biodiversity impact on an all-Ireland front. Meaningful working relationships have been established between government departments and agencies in the Republic and Northern Ireland. This has been cemented by the close working partnership that has been developed between NIBG and the Biodiversity Forum.

All parts of Ireland have a highly fragmented landscape and many issues threaten the survival of the island's natural heritage. Accordingly, NIBG expects government departments to recognise the importance of continuing to working on an island-wide basis if we are to halt biodiversity loss and achieve recovery. There are a number of initiatives in progress:

3.10.1 Invasive Species

Following the Invasive Species in Ireland Report, NIEA in partnership with the National Parks and Wildlife Service, Dublin (NPWS) jointly funded the Invasive Species in Ireland Project. This commissioned a partnership between EnviroCentre and Quercus in May 2006; a three year contract to implement the recommendations of the Invasive Species in Ireland Report. There is a focused Project Steering group and meetings of four technical working groups (Freshwater, Marine, Terrestrial and Education).

The project has been very successful to date, producing many outputs:

- Identification of invasive species posing the biggest threat to our biodiversity;
- Management plans for the highest risk species;
- Contingency plans for those high risk species which are not here yet;
- Best Practice Management Guidance for those more common invasive species; and
- Codes of Practice for key sectors have been developed.

These project outputs are publicly available on a new dedicated website, created as part of the project (www.invasivespeciesireland.com).

Didemnum spp. (Invasive Species) Julia Nunn

8

Manual Contraction

191

Recommendation 26 Northern Ireland government should work with its counterpart in the Republic to prioritise the delivery of management plans on invasive species, ensuring sufficient resourcing and engagement, with establishment of a reporting cycle to monitor progress.

3.10.2 All-Island Marine Biodiversity

NIEA partnered with the Marine Institute (Galway) to enable the Joint Irish Bathymetric Survey. This project was funded by INTERREG, led by the Maritime and Coastguard Agency (MCA) and covered the area between Tory Island and Torr Head. NIEA also jointfunded the Irish Whale and Dolphin Group (IWDG) to monitor and build awareness of highly mobile cetaceans in Irish waters. Partners for the ISCOPE I and II (Irish Scheme for Cetacean Observation and Public Education) research contracts were NPWS, Heritage Council and Marine Institute. A brief NI status report on the harbour porpoise has been prepared for inclusion in the NIBG report (see Section 5.4.1.3). NIEA also jointfunded the international IWDG Muc Mhara (harbour porpoise) conference in September 2008.

3.10.3 All-Island Priority Species

Seven All-Ireland Action Plans have been published: Irish Lady's-Tresses; Pollan; Corncrake; Irish Hare; Bats; Killarney Fern and Red Squirrel. Currently no other all-Ireland plans are in the pipeline. These plans (perhaps understandably) focus on high profile species but there is now a need to have a more objective set of all-Ireland priorities for biodiversity work, particularly in addressing impacts of landscape-scale changes and climate change impacts.

Recommendation 27 NIBG and the Biodiversity Forum should jointly review the delivery and outcomes of the all-Ireland Species Action Plans produced so far, with lead partners identified where necessary. Discussion on future priorities for action plans should take place between these two bodies and with the respective governments.

Publications - CEDaR are involved in several publications, for example Lichen Ireland and Orchid Ireland. In 2004 the Ulster Museum (including CEDaR) published a book, The Natural History of Ireland's Dragonflies, which was supported and aided by statutory bodies in both parts of Ireland. A book on the Natural History of Ulster (the old kingdom) is in preparation. Joint recording - There are a number of North/South recording initiatives which include the Wetland Bird Survey (WeBS)/Irish Wetland Bird Survey (IWeBS), the Seabird Monitoring Programme and Breeding Bird Survey (BBS)/Common Birds Consensus (CBC), Bat monitoring, the Irish Hare Survey and a proposed otter survey. Both NIEA and NPWS support the Irish Whale and Dolphin Society monitoring of cetaceans in Irish waters.

Red Data Species - NIEA in partnership with NPWS are contributing to the Irish Red Data book on such species as terrestrial mammals, water beetles, bryophytes and vascular plants. RSPB and Birdwatch Ireland (with support from both governments) have jointly published (and occasionally revised) a list of priority bird species, Birds of Conservation Concern.



3.10.4 Cross Border Site Management

As some ASSI/SAC/SPA/Ramsar designated sites straddle the border, it has been necessary to ensure the management objectives and practices adopted on each side are compatible and achieve favourable conservation status for the site features. Work is ongoing to ensure that this is achieved.

3.10.5 Joint Working Relationships

The first joint meeting of the Biodiversity Forum [Republic of Ireland], chaired by Dr Peter Wyse Jackson, and Dr Bob Brown, took place in Athlone on 3 October 2007, as part of the Annual Biodiversity Conference organised by the Department of the Environment, Heritage and Local Government in the Republic of Ireland. A list of issues for joint working was agreed and priorities identified but kept under review (in bold):

- Designated Sites;
- All-island SAPs prosecution;
- Translocation/re-introductions;
- Review of plans with regard to distinct populations/ biogeographical areas, etc;
- Co-ordinated management of cross border sites and catchments;
- Alien Species;
- Marine and Coastal issues and conservation;
- LBAPs, e.g. joint funding of applications (INTERREG);
- Climate change species/habitat distribution;
- Loughs/Water Framework Directive delivery by Loughs Agency;
- Rare breeds & cultivars currently being progressed in Rol in relation to designated sites and criteria for designation;
- Agriculture including 'pests'; Rural Environmental Protection Schemes (REPS), CMS, agri-environment schemes; comparisons and compatibility, GM issues;
- Red Data Books;
- Public Awareness;
- Business sharing of best practice;
- Ports and harbours sharing of best practice for biodiversity gain;
- Railways links between NI and Rol track management;
- Corporate Social Responsibility integrating biodiversity into CSR via Chamber of Commerce;
- Opportunities via ISO 14001 need for steering and guidance;
- Dissemination of information ensuring information is appropriate to the audience, i.e. management/ operators with regard to industry;
- Offshore Marine identification of shared priority species/habitats; and
- Opportunities for aligning country strategies and/or strategic thinking (incl. EU Communication).

This was reciprocated on 19 November 2008 when NIBG hosted a joint conference on the theme, Ireland's Biodiversity in a Changing Climate at the Canal Court Hotel in Newry. This is discussed in Chapter 6 below. Other key issues from the meeting to be followed up include:

- Harmonisation of management of cross-border sites;
- The work of the Loughs Agency (re: Foyle and Carlingford) and biodiversity;
- Clarification of progress in joint work on the Marine and Water Framework Directives;
- Data sharing on biodiversity priorities;
- Harmonisation of indicator species and, where appropriate, of legislation relating to biodiversity priorities; and
- Criteria for selection of species for all-Ireland action plans.

3.11 Resources & Funding

NIBG has frequently expressed concerns that resourcing of biodiversity work in all departments and agencies, but particularly in NIEA, has not been sufficient to meet the objectives of the Biodiversity Strategy. These concerns were sharpened during the preparation of this report and on 21 May 2009 NIBG met the Director of Natural Heritage in NIEA to discuss their resourcing. The underlying view that he expressed was that there were "sufficient resources to implement [NIEA] responsibilities under the Northern Ireland Biodiversity Strategy".

Key points made by the Director included:

- Natural Heritage's basic budget for research, grant aid, reserves, country parks and ASSIs, etc in the financial year 2009/10 is £8.25m. Previous years have seen more than this (e.g. an extra £1.25m in 2008/09) as a result of bids for extra funds. It is unlikely that there will be much opportunity for this in the current year;
- Out of a total staff of ca 200, about 160 are professional or administrative staff implementing core work. There have been no major changes in recent years however, a successful bid for 14 salaried posts deployed in the ASSI programme has now been offset by a loss of 6 posts under the 2007 comprehensive spending review and a further 10 posts may also be lost next year;
- Efficiency savings were not regarded as threatening frontline services and statutory duties while the ASSI, planning, and property management roles were regarded as 'protected'. However, NIBG raised the possibility that non-statutory functions such as biodiversity might be threatened, this point was accepted. Members expressed concern that NIEA's

own BIP incorporated targets that were defined by the resources rather than the requirements of the Strategy;

- Grant aid inter-alia to local authorities and NGOs has gradually increased. In 2008/09 it was £3.2m, partly due to a successful bid for extra resources that year. Again, the likelihood of a similar boost this year is regarded as unlikely, and given cost of living increases, etc. a real cut in grant aid is anticipated. The proportion of grant aid that actually goes to biodiversity is difficult to document because many projects receiving support have other elements incorporated; and
- The Director acknowledged that none of the above at present accounted for the significant new array of Northern Ireland priority species following the UK Review.

After consideration of the points made by the Director and in the context of the other issues raised in this report, NIBG is not convinced that resources are adequate. There are welcome elements however. The ASSI programme is a major component of biodiversity protection and recovery and this is being maintained. Input to the planning process is also secure, not least because of Ministerial direction in this case. Grant aid, though likely to be eroded somewhat, remains a highly efficient means of delivering biodiversity measures.

NIBG would like to make the following comments in relation to resourcing:

- There is a risk of making false economies. Efficiency savings that are based solely on budgetary considerations ignore the fact that preventing biodiversity loss is far cheaper than restoring it later and short-term savings may entail long-term losses. This is particularly the case when losing the benefits that biodiversity and, more broadly, ecosystem services can bring;
- Addressing biodiversity issues and implementing the Strategy recommendations will also comply with statutory obligations under the EU Directives and UK legislation. Resource allocation should reflect these synergies and in doing so efficiencies can be achieved that do not result in reduced implementation of the Strategy;

- New measures, e.g. the Climate Change Act, the Review of Public Administration and the proposed Biodiversity Duty in the revised Wildlife (N Ireland) Order will require resourcing that is not apparently in place yet;
- It is well known that monitoring different elements of biodiversity can be resource-hungry. However government has committed itself to the target of halting biodiversity loss by 2016 and NIBG consider that a key element of this is demonstrating achievement. In NIBG's attempt to scrutinise actual progress of priority species it became clear that lack of data and complexities in accessing data, are now a real problem, and to a large extent due to a lack of resources devoted to this important work. Without an injection of resources into this area it may well be impossible to demonstrate success, or progress, regarding the 2016 target. Consideration should be given to accessing LIFE+ funds for this, possibly in co-operation with equivalent bodies in the Republic for all-Ireland priorities;
- Biodiversity Delivery Groups and the network of Local Biodiversity Officers can add significant value to the process of implementing the Strategy and achieve real results for species and habitats. However, these need to be directed and focused on clear outcomes, without which there is a risk that resources will be wasted on the production of further plans and work programmes without implementation;
- Outside of NIEA's work, a clear area of concern remains the resources devoted to agri-environment measures, though NIBG recognises that this is constrained by EU regulations. However, NIBG considers that the resourcing of NICMS is still a major constraint on the measures that could be applied to support farmland biodiversity, particularly when viewed against the value of other support systems for agriculture. This is very regrettable, given the enormous impact and potential for recovery that agriculture has on biodiversity; and
- Funding opportunities will impact upon the delivery of biodiversity conservation, especially at a local level. Many funding bodies require an assessment or consideration of the impact that new developments will have upon biodiversity, and this should be encouraged. There are large amounts of funding



currently available through Interreg programmes which will allow for biodiversity projects on a national and international scale.

In conclusion, NIBG remains concerned that present resources are inadequate to meet the requirements of the Strategy, and that measures aimed at efficiencies will both imperil the existing implementation work and may result in real long-term damage through shortterm cost savings. In this respect NIBG would draw attention to the report to Defra UK Biodiversity Action Plan: Preparing Costings for Species and Habitat Action Plans. This predicted a shortfall in spending of £12m in 2010/2011 for Northern Ireland. NIBG has no figures to test this directly but since no major resource injections have occurred since government contributed to that report, we cannot dispute this key implication. Lack of resources is a major problem in achieving Northern Ireland's target of halting biodiversity loss by 2016.

3.12 Conclusions

Experience has shown that legislation is the key driver for environmental change within the public and private sectors. However, the following support mechanisms are also essential:

- Clear and unambiguous leadership from Ministers, senior civil servants and business and community leaders;
- The establishment of 'champions for change' at a senior level within organisations;
- Setting of clear objectives with SMART targets which are embedded within management systems;
- The appointment of specialists with the appropriate skill sets to develop programmes and actions and strong support for bodies embarking on the delivery of their BIPs; and
- Adequate resourcing and maximisation of resource use through partnerships, alignment and co-ordination of different work programmes to achieve synergies.

Annalong River & Slieve Lamagan Robert Thompson A Statemark

Chapter 04 Actions from the 76 Recommendations

4.1 Introduction

The Northern Ireland Biodiversity Strategy was completed in 2000 and finally signed off in 2002. It contains 76 recommendations applying to all aspects of government, local authority and other sectors, although government stated it would take the lead. This Chapter reports on the implementation of the agreed recommendations.

4.2 Progress on Recommendations in the Northern Ireland Biodiversity Strategy 2002

For details of lead responsibilities and other parties, together with rationale for original recommendations, refer to the Northern Ireland Biodiversity Strategy.

	Northern Ireland Biodiversity Strategy Recommendations	Notes on each Recommendation
	Ger	neral (Section 5.1)
1	Assess all new or revised policies and programmes for the precautionary principle.	Not always applied, e.g. where an economic issue or political stance has taken precedence over the environmental need for a precautionary principle approach. This issue needs to be explored and further embedded into the system.
2	Increase the co-ordination of the work of all government departments and agencies on biodiversity to ensure integration and commonality of purpose.	This has improved over the lifetime of the Strategy, for example through shared experience of developing BIPs. However there are still occasions when even within a department this has not been achieved. The involvement of a range of agencies in the development of the HAPs and SAPS has also increased this work, although in some cases this has not progressed as quickly as perhaps it should.
3	Extend the application of the ecosystem approach to environmental management in Northern Ireland.	There is still much work needed on this approach (see Section 3.1). With JNCC having stated that it is important to quantify this work, but recognising that there are no agreed methods for doing so, this is difficult to assess. Government should clarify how this is to be achieved.

NIBG COMMENT: Progress has been made in embedding biodiversity and ecosystem management into government programmes and business plans. However, there is much left to do, and support at Executive and Permanent Secretary level should be maintained and strengthened to achieve this. As recommended in our 2005 report, lines of accountability have been strengthened. However, government should recognise that as with other cross-cutting obligations, training and support will be an ongoing requirement. A major initiative is required to translate the ecosystem approach from being a general concept to a well-defined and actioned policy.

	Northern Ireland Biodiversity Strategy Recommendations	Notes on each Recommendation
	Agricultura	l systems and support (Section 5.2)
4	Make full use of opportunities in Agenda 2000 and subsequent CAP reforms to encourage environmentally sustainable farming.	Changes in Single Farm Payment (SFP) and Less-Favoured Area Compensatory Allowances (LFACA) have altered this situation for the better. Sustainable farming is now also one of the targets of the Ulster Farmers' Union. Regrettably set-aside has been lost (with little mitigation), with likely adverse impacts on birds and invertebrates.
5	Develop, monitor and enforce environmental conditions attached to EU support payments.	SFP is now conditional on many aspects of compliance with good farming practice, many of which are environmental.
6	Tailor the approach to the new 2000-2006 agri-environment programme to the priorities identified in habitat and species action plans.	The new CMS launched in 2008 strongly focused on priority habitats and species. Priority is given to landowners with ASSIs, etc. on their land. Target is to have 50% of agricultural land in the scheme by 2013, i.e. ca 5000 extra agreements. It should be noted however, that numbers of farms or area of land affected is not in itself a biodiversity outcome. DARD should take strong measures to ensure that prescriptions are delivered correctly and in the most appropriate areas.
7	Use the new agri-environment programme and other mechanisms to promote agricultural practices which encourage minimal use of fertilisers and chemicals and reduce pollution.	There is an organic supplement payable under the new CMS and measures to protect watercourses. The Nitrates Directive applies to all farmers and limits the use of slurry and other manures, both organic and inorganic. The Farm Nutrient Management Scheme helps farmers comply with the Directive.
8	Seek additional funding for agri- environment schemes, particularly through the match funding proposals under "modulation".	Done. Voluntary modulation is used to fund the basic agri-environment schemes and a portion of the Rural Development Programme.
9	Review countryside management policies and re-issue the Countryside Management Scheme.	This recommendation has been superseded by the introduction of the new NICMS.
10	Provide an appropriate and adequately resourced advisory service for farmers including environmental training, farm conservation plans and working demonstrations, etc., thus raising awareness of biodiversity issues.	Focus farms are being reintroduced across all sectors, including environment, and can be an excellent resource for demonstrating best practice. The new CMS entails compulsory linked training attendance.

	Northern Ireland Biodiver Strategy Recommendation	
11	Establish adequate waste storage systems on all farms.	Applications to the scheme for slurry storage systems now closed, completion of facilities in progress.
12	Establish nutrient management on all farms.	Farm nutrient management scheme has helped all farms to progress this. The Nitrates Directive regulates appropriate periods for application of slurry and bag fertiliser. Phosphate should only be applied following soil testing and to meet crop requirements.
13	Provide advice and incentives to maximise the value of field boundaries as wildlife habitats.	The new CMS scheme offers grants for new hedges and protecting existing hedges. Set-aside scheme has closed - this removes a significant opportunity to support farmland birds and invertebrates.

NIBG COMMENT: Significant progress has been made by DARD through its new agri-environment schemes, compliance with good farming practices and requirements like the Nitrates Directive. In 2005 NIBG recommended that clear direction from the DARD Executive to its component bodies was needed to ensure a consistent approach – we feel this is still a requirement. Other measures we proposed in 2005 have seen progress and we strongly welcome a closer liaison between DARD and NIEA as proposed, with shared definitions, priorities for species and habitats and management of designated sites.

	Forestry and woodland management (Section 5.3)	
14	Protect, enhance and extend remaining ancient semi-natural woodland sites and provide incentives for their management.	A management strategy was produced for all Forest Service woodland which was included in the Ancient Woodland Inventory (Woodland Trust, 2007). Some environmental grant aid available from Forest Service, but also from new NICMS.
15	Manage commercial woodland sustainably and promote research that could lead to improving the biodiversity value of conifer woodland.	Draft Forestry Bill nearing completion. It aims to improve sustainability through better regulation, research and guidance but should also contain statutory obligations for biodiversity conservation, as will be required under the forthcoming Biodiversity Duty, as well as recognising the wider public benefit afforded by woodland. UKWAS (UK Woodland Assurance Standard) certification reviewed regularly.
16	Prepare a new woodland inventory of Northern Ireland.	Not done and is badly needed. Forest Service are now looking at ways of delivering this. Woodland Trust undertook Ancient Woodland Inventory but this covers only ca 25% of woodlands. NI government has set target of doubling woodland cover – this is unmeasurable without full data, which is also needed to record general trends and losses.
17	Provide and distribute information and encourage woodland owners to manage their sites for the benefit of biodiversity.	Native Woodland Definitions & Guidance booklet produced in 2008. Means of disseminating this information now needs to be put in place.

	Northern Ireland Biodiversit	y Notes on each Recommendation
18	Implement stronger controls over the loss of woodlands of biodiversity value.	Felling licenses still not required despite frequent recommendations and Tree Protection Orders (TPO) are still the only mechanism available. However Planning Service have apparently increased work, protecting whole woodlands through TPOs. Legislation is due in 2009. The situation is increasingly urgent as significant felling is reported for fuel purposes. Coupled with this is an urgent need to ensure that Planted Ancient Woodland sites are restored to their former glory.
19	Increase woodland cover, especially that of native broadleaved woodland.	In 2007/8 552 ha were planted, 537 ha private planting (including 275 ha short rotation coppice) and 15 ha of state planting. 92% of planting was broadleaf. Programme for Government targets will in no way meet the Forest Service's aim to double woodland cover over 50 years. This would require an annual planting programme of 1,740 hectares.
20	Further develop a strategic approach for the implementation of forestry policy.	Indicative maps for afforestation produced in 2007/8.

NIBG COMMENT: Recognising that some progress has been made, there is still much to be done. Any new legislation must look beyond the commercial value of timber and look to ensure that society as a whole benefit from the wider public benefits of forestry/woodland. These must include public access, health, education and indeed the biodiversity value of restoring planted ancient woodland sites in the public and private estate. Legislation in respect of the requirement for felling permissions is now most urgent as is an inventory of all woodland in the province.

	Coastal and marine management (Section 5.4)	
21	Implement measures to ensure that sea fisheries operate on as sustainable a basis as possible.	This is a virtually unmeasurable recommendation, but by any standard it has failed. The Fisheries Review ('Net benefits') was very welcome, particularly DARD's inquiry into NI Inshore Fisheries. However, recommendations have not yet progressed. It is essential that DARD's Fisheries and Rural Policy Business Plan 08/09 with its requirement to restore key commercial fish stocks is implemented.
22	Promote the full integration of environmental considerations into the Common Fisheries Policy to improve its effectiveness at conserving both fish stocks and marine biodiversity.	This is more of an EU-level issue than a Northern Ireland one - the issue is how this is handled here and how local input is achieved to ensure sustainable fishing. This recommendation, as with the previous one, needs revision.
23	Introduce localised fisheries measures where necessary to protect vulnerable habitats or species.	This has been done in Strangford Lough. Some negotiation with industry in relation to types of gear used has taken place, but other key sites remain unprotected.



	Northern Ireland Biodiversity Strategy Recommendations	Notes on each Recommendation
24	Institute new structures for liaison between fisheries and environmental interests.	Environmental interests are now represented at the discussions at the Fisheries Forum, and good collaboration was achieved during the Inshore Fisheries Review. Since then no meetings have taken place.
25	Introduce new legislation to enable the protection of intertidal species and their habitats.	Not done, although the Inshore Fisheries Review examined this issue. This is why primary fisheries legislation is needed. It should be assembled to put the fishing industry on a much more sustainable footing.
26	Encourage aquaculture to develop in ways which minimise impacts on biodiversity.	A strategy has been long awaited but is still not available. It is essential that this be developed and implemented as a matter of urgency.
27	Adopt stronger measures, including the enforcement of anti-pollution legislation, to minimise the entry of effluent and solid wastes into the sea.	NI is seriously behind in the implementation of EU legislation. However, efforts are being made to redress this through Urban Waste Water Treatment programmes, implementation of the Bathing Waters Directive via the Blue Flag system and the designation of other areas under Shellfish Waters designations.
28	Ensure effective multi- agency emergency planning arrangements for marine pollution.	This is in place via several tiers of the National Contingency Plan and NIEA has arrangements assembled. Some concerns remain however in respect of co-ordination in cross-border areas of water, not just cross-border loughs, but open sea areas further out.
29	Use the Regional Strategic Framework and the planning system to restrict the further development of coastal areas and identify areas where no development will be permitted.	This has not happened as yet and it's hoped that Marine Spatial Planning will be developed within a NI Marine Bill during 2010, also covering Marine Conservation Zones (MCZ) and licensing. In the meantime, significant areas of coast are vulnerable. Another key element is the preparation of PPS20 Coastal Planning, which should now be brought forward.
30	Adopt strategic planning for coastal defence, with a presumption against new hard structures and toward the amelioration of existing hard structures.	There is no evidence that this has been actioned although consultations on behalf of Rivers Agency took place. This is surprising and disappointing, given the issues likely to impact in the context of climate change and sea level rise. This recommendation should be addressed as a matter of urgency.
31	Introduce new legislation to control sand and gravel extraction in costal and marine areas.	The Environmental Impact Assessment and Natural Habitats (Extraction of Minerals by Marine Dredging; England and Northern Ireland) Regulations 2007 were introduced to ensure there is no adverse effect of extraction proposals. It is not yet clear how these are working.

	Northern Ireland Biodiversity Strategy Recommendations	Notes on each Recommendation
32	Set up appropriate new bodies for marine protected areas to ensure more effective management.	This recommendation has largely been superseded. Management and identification of MCZs is a mandatory part of the EU requirements, as well as being part of the Marine Bill legislation. This should be undertaken by NIEA on the basis of conservation need. Wider issues may come under the remit of a Marine Management Organisation, through the Marine Bill Legislation, but no decisions have been made on this yet.
33	Establish the Northern Ireland Costal Forum.	Done, but at an early stage. The development of a number of measures cited above will be a key test of the Forum's effectiveness.

NIBG COMMENT: The Net Benefits and Inshore Fisheries Reviews, the forthcoming Marine Bill with its requirements for marine spatial planning and marine protected areas, hold out the possibility of a more responsible approach to maintaining marine and coastal biodiversity. However progress in achieving the recommendations in the Biodiversity Strategy is extremely slow and deterioration of many marine habitats continues. In addition, a number of measures NIBG proposed in 2005 (Section 7.2.3 of that report) have not been addressed. A significant step forward would be the revision of the recommendations into a truly effective set of measures, and in the context of the Marine Bill establish a Northern Irish Marine Management Organisation, one of whose key roles should be to address these deficiencies. Proposals following the Fisheries Review are long overdue and should be brought forward urgently.

	Water use and management (Section 5.5)		
34	Draw up and implement a comprehensive strategy for river conservation in order to maintain and enhance the biodiversity of inland waterways.	River Basin Management Plans, under the Water Framework Directive, are in preparation. The target is good ecological status by 2015. However, much is based on reiteration of existing measures rather than new initiatives (see Section 3.4.4).	
35	Develop and implement a eutrophication control strategy which may involve new legislation.	Not implemented. Nitrates Directive applies only to agricultural land and activities and does not control pollutants from other non-agricultural sources, e.g. sewage works, septic tanks and industrial discharges, so its benefits are limited. However, it should assist with some problems relating to dispersed pollution.	
36	Engage all relevant users and riparian interests in the preparation and implementation of management plans for all catchments, in co-operation with the authorities in the Republic of Ireland where appropriate.	The consultation for River Basin Management Plans has been out for consultation since December 2008, and catchment Stakeholder Groups have been established.	

	Northern Ireland Biodiversity Strategy Recommendations	Notes on each Recommendation
37	Adopt stronger measures, including the enforcement of anti-pollution legislation, to minimise the entry of effluent and solid wastes into water-courses and wetlands.	NIEA have successfully prosecuted a number of polluters in 2008, including Water Service. However, 'Consents to Discharge' may still be issued, e.g. for sewerage works following severe rain storms.

NIBG COMMENT: Work in implementing the Strategy recommendations is continuing and strengthening, but there is a long way to go. A programme of measures under the Water Framework Directive has to be agreed by September 2009, and government should use this as the key device to deliver its biodiversity commitments in this sector.

	Construction and development (Section 5.6)		
38	Address biodiversity priorities fully and consistently in all development plans.	SLNCIs have been the main method, but only 137 have been adopted out of the present total of 889 – how effective those have been is difficult to assess. The new planning reforms will need to address this, in context of likely Biodiversity Duty. The area plan process should also be revitalised to address this. If done it would give strength to a range of measures including PPS2.	
39	Review and, if necessary, strengthen the protection given to designated sites and SLNCIs through the planning process.	Protection of the adopted SLNCIs has been afforded through the area planning process in principle, but in practice, damage and loss is occurring. The review of PPS2 should address this problem, but has been long delayed.	
40	Review and, if necessary, amend planning regulations to ensure that EIAs are carried out on all projects that may have biodiversity impacts, and ensure these are carried out to recognised standards.	Inconsistent application. The onus is on applicants to identify if an EIA is needed. There should be mandatory EIAs for all large planning applications. The Planning Service currently has the power to seek an EIA if an Environmental Statement sent with a planning application indicates the need.	
41	Ensure all public bodies conserve and enhance biodiversity on their land and through their activities.	Through the BIP and LBAP processes there is far more awareness regarding this. However until the Wildlife Order legislation is passed containing a Biodiversity Duty, it is unlikely that this will be fully realised.	
42	Implement the Waste Management Strategy for Northern Ireland and continue to review current policies that relate to illegal dumping which has an impact on biodiversity.	NIEA have introduced a 50 strong 'Crime Prevention Team' to deal with this issue but will not target 'fly tipping'.	

Northern Ireland Biodiversity Strategy Recommendations Notes on each Recommendation

NIBG COMMENT: Progress has been made through a number of measures, e.g. SLNCIs and preparation of BIPs, but until the Wildlife Order has been passed and the RPA fully embraces its requirements, we will not see the full potential of these measures. Revision of PPS2 Planning and Nature Conservation is urgent and essential.

Tourism and recreation (Section 5.7)

43	Prepare and implement integrated rural development, tourism development and environmental conservation strategies, where wildlife interests and tourist potential coincide.	Recently released NI Rural Development Programme will provide the resources to enable this work to happen having identified the needs in the rural community.
44	Integrated sensitivity zones and carrying capacity estimates into all strategic and area planning.	Not done and we are not aware that it has been integrated into any forward planning by government. However, the Lough Neagh Advisory Committee, with support from the Lough Neagh Partnership have implemented this in their area, proving it is achievable.
45	Ensure that the impacts of recreational activities are well understood and that these impacts are ameliorated through the development of codes of conduct for individual recreational activities or bylaws.	An American programme, Leave no Trace is an outdoor ethics programme for sustainable countryside recreation. The training for and co-ordination of this is being rolled out by CAAN, with NIEA and others contributing financially (www.leavenotraceireland.org).

NIBG COMMENT: Despite some local initiatives, implementation of these recommendations is only at a very preliminary stage. All tourism and recreational strategies should be subject to assessment for impacts on biodiversity, and where needed, adjustments made by NI Tourist Board and NI Sports Council.

	Peatland management (Section 5.8)			
46	Identify areas of upland forest which, when clear felled, should remain unplanted and be restored to peatland or other habitats.	This has been done on Forest Service land. Forest Service has a commitment not to plant or provide grant-aid for afforestation on deep and poorly-drained peat.		
47	Update, re-issue and continue to implement government's policy on peatland conservation.	To be implemented through Peatlands and Upland Biodiversity Delivery Group, established in 2006. Review of policy at present delayed and should be undertaken as soon as possible. In the meantime, the action plan is being revised although really the policy should be reviewed first.		

Northern Ireland Biodiversity Strategy Recommendations

Notes on each Recommendation

NIBG COMMENT: NIBG welcomes Forest Service's approach to peatlands which once felled, should remain unplanted and in a natural state. Adequate resources should be provided for restoration, e.g. closing drains that were needed for the afforestation. This would in time contribute to Northern Ireland's CO2 sequestration as peat habitat recovered. It is hoped that the Peatlands and Upland Biodiversity Delivery Group will closely monitor progress and press for review of the peatland policy. A further concern is the impact of infrastructure developments in association with wind turbines, causing loss of habitat, particularly through drainage of peatlands. Government should assess whether or not CO2 reduction achieved by wind farms on peatlands is counteracted by CO2 release due to release of sequestrated carbon from damaged peat.

Introduced species and genetic material (Section 5.9)

48	Review the past and current effects of introduced species and genetic material in Ireland, assess the risks of further introductions and apply the guiding principles of the Conference of Parties of the CBD.	An Invasive Species Forum and website has been introduced. Work is ongoing with a range of stakeholders. Contingency plans have been developed for 4 species. Codes of Practice have been developed for a number of key sectors. The reformed Wildlife (NI) Order will also introduce improvements regarding invasive species. However, this work will be undermined unless adequate monitoring takes place.
49	Revise schedules to the Wildlife (Northern Ireland) Order 1985.	In progress. The enactment of this revision is essential for compliance with EU legislation and for those priority species for which extra legal protection is necessary.

NIBG COMMENT: Significant progress has been made in respect of addressing the threat of existing invasive species and preparing for likely arrivals. The lessons from the arrivals of the zebra mussel and slipper limpet in Northern Ireland highlight the need for vigilance. This is even more urgent in the context of climate change which could offer opportunities for a wider range of invasive species.

	Protecting special areas for biodiversity (Section 5.10)			
50	Further develop guidelines for ASSI selection.	NIEA has produced guidelines for ornithological ASSIs, and a range of guidelines are developed (and constantly under review as new data emerges) for groups including higher plants, dragonflies, bryophytes, etc. These are mainly for internal use. It is anticipated that the completion of more all-Ireland Red Data books on various taxa will also help significantly.		
51	Complete habitat and species surveys.	Compliance with this recommendation is hard to assess. The Countryside Survey was completed in 2008 for general habitats, and the status of priority habitats in ASSIs is documented. Moreover, NIEA have been undertaking considerable survey work to underpin further designations. A number of other reports are in train on species. However it is clear that data on the status of most priority species is badly lacking.		

	Northern Ireland Biodiversity Strategy Recommendations	Notes on each Recommendation
52	Designate qualifying ASSIs.	Programme underway with priority given to Natura 2000 sites. A lack of resources has resulted in significant delays, but Minister has stated that 440 would be designated by 2016.
53	Complete and implement conservation objectives or conservation plans for all ASSIs, SPAs and SACs.	Work has been undertaken with 90% of sites having been monitored for Site Integrity. Report produced in 2008 (see Chapter 5).
54	Introduce a positive management scheme for ASSIs.	MOSS (Management of Sensitive Sites) scheme reviewed to take NICMS into account. The former to restore sites, the latter to maintain in good condition. As with the designation programme, there is a lack of adequate resources for management, especially for MOSS, however significant progress on management plans has taken place.
55	Encourage all relevant sectors to engage in the management of conservation sites.	ASSI management is now linked to the new NICMS scheme for sites in good condition. NIEA are developing a tailored screening matrix for use in carrying out Article 6 Assessments. NIEA through grant aid continues to support a range of environmental organisations in their management of conservation sites, but need to ensure other departments and agencies meet their responsibilities.
56	Review the effectiveness and efficiency of the current protection and management of ASSIs and make necessary legislative changes.	NIBG expressed concern about implementation of this in the 2005 report (Section 7.1.3). Whilst closer monitoring and use of management plans has improved, the feed in of newly designated sites, whilst welcome, continues to put pressure on the system. This can only be resolved by an injection of significant new resources.

NIBG COMMENT: NIBG has deep concerns about the resourcing of the ASSI programme and its delayed implementation. However it acknowledges that progress is being made under the revised programme and that work is targeted to the most vulnerable features. It is vital that an effective post-designation monitoring and management programme is maintained.

Protecting priority habitats and species (Section 5.11)

57 Contribute to UK Habitat and Species Action Plans through the preparation and implementation of costed Northern Ireland components of these plans. 57 Contribute to UK Habitat and Species Action Plans through the preparation and implementation of costed Northern Ireland components of these plans. 57 Contribute to UK Habitat and Solution of the UK priority species list is being followed by grouping species ('brigading') into habitats. These, in turn, have been grouped into the work of Delivery Groups. Whilst the existing SAPs and HAPs remain valid, future planning will be largely through 'signposting' of required actions.

	Northern Ireland Biodiversity Strategy Recommendations	Notes on each Recommendation
58	Prepare and implement costed action plans for additional Northern Ireland habitats which are not covered by UK action plans.	Ten plans are underway. The action plans produced so far have had superficial costing, but in any case they have not been budgeted. No specific amounts have been allocated or sourced from departments. Implementation issues are discussed in Chapter 3.
59	Review the lists of Northern Ireland species of conservation concern and priority species, seek additional information and conduct further reviews of the lists as required.	This recommendation originally applied to lists extant in ca 2000 and was implemented. Now, following the latest UK review, the Northern Ireland list is again being reviewed – this work is underway and is likely to finish in summer 2009.
60	Prepare and implement costed action plans or species statements for additional Northern Ireland species which are not covered by UK action plans.	41 plans being developed. Not all are available yet. The issue of costing and budgeting referred to under Recommendation 58 applies here also. With the addition of significant numbers of new priority NI species following the UK Review, it has been agreed that a new system of 'signposting' key actions will be established. This will follow publication of a new NI list, likely later this year.
61	Prepare or update Irish Red Data Books where there is adequate data.	This is ongoing work and will continue. The revised Red List for Birds was published in Irish Birds in 2007 and is being used by NIEA to inform the on-going Priority Species review.

NIBG COMMENT: The large number of species and habitats requiring action plans, plus those extra ones as a consequence of the latest reviews, represent a considerable challenge and extra cost in implementation. NIBG welcomes the creation of Biodiversity Delivery Groups tasked with the role of overseeing implementation. These groups are at a relatively early stage in their work. It is essential that they focus strongly on measuring implementation of all plans, and identifying problems and issues with delivery. See also comments on resourcing in Section 3.11.

	Conserving genetic biodiversity (Section 5.12)			
62	Identify surviving plant cultivars and domestic livestock breeds of historic importance, review the current arrangements for their conservation and implement conservation action plans where appropriate.	For almost all varieties of cultivars and breeds this has not been done, and is responsibility of DARD. NIBG pressed for this to be implemented without success. Notable exceptions to this are the support now given to Irish Moiled Cattle under NICMS following representations by the Irish Moiled Cattle Society, and research on some rare breeds at Glenwherry. DARD has commented that whilst the work would be relevant under NI Rural Development Programme, resources are currently unavailable.		
63	Identify and promote the conservation of native gene pools in Northern Ireland.	Work underway on white-clawed crayfish, freshwater pearl mussel, Irish hare and water crowfoot. Discovery of Real's wood white. 30 species of sponge new to science around Rathlin – currently these are unique to Northern Ireland.		

Northern Ireland Biodiversity Strategy Recommendations

Notes on each Recommendation

NIBG COMMENT: The failure of DARD to address the recommendation relating to Northern Ireland cultivars and breeds, to which they agreed, is very regrettable. DARD should now take steps to undertake this work at the earliest opportunity, given that ensuring favourable status should be in place by 2016. However, the department's support for Moiled cattle is welcome. The work being conducted, or relevant to, Recommendation 63 highlights the possibility that other species, when examined closely may prove unique to the island of Ireland, or even Northern Ireland.

Research and monitoring (Section 5.13)

64	Assess the conservation status of poorly known elements of biodiversity.	There is a significant need to more overtly focus and co-ordinate research targeted at species and habitat priorities. This should be an action for NIEA, Universities, Biodiversity Delivery Groups and NGOs.
65	Review CEDaR procedures to support the activities of the Northern Ireland Biodiversity Strategy and prepare a five-year plan.	CEDaR is currently preparing a ten-year business plan. This is an opportunity to address the problems of data deficiency relating to priority species, to build habitat data into their resource, to enhance their role relating to marine biodiversity and to explore ways of making the data more accessible.
66	Monitor the extent, distribution, variation and quality of broad and priority habitats.	Undertaken by Northern Ireland Countryside Survey (broad habitats) and ASSI monitoring (specialised priority habitats).
67	Monitor species of conservation concern.	This is a major concern and at present seems to be badly under- resourced. Not only are most Sites of Conservation Concern not being monitored adequately, but neither are priority species.

NIBG COMMENT: There is a major deficiency in data relating to monitoring the status of priority species. Whilst popular and charismatic taxa often have data as a result of voluntary work (even here, e.g. with some bird species there are problems), the status of many priority species is so poorly known that it is not possible to monitor overall progress towards favourable conservation status and the 2016 target. Strong baseline and current data are needed to demonstrate progress. However, data on priority species within the ASSI network is much more robust.

Knowledge, understanding and participation (section 5.14)

information on biodiversity available within Northern Ireland. and the Local Biodiversity Officers, funded through NIEA, have enabled some of this work to be done. 10 district council LBAP documents are now available. In 2006/7 NIEA undertook a major awareness campaign entitled In our Nature, which raised awareness in the community and developed a website for biodiversity (www.biodiversityni.com), suitable for interested but non-specialist readers. A number of voluntary bodies have their own programmes for awareness raising and biodiversity officers implementing these.	68		have enabled some of this work to be done. 10 district council LBAP documents are now available. In 2006/7 NIEA undertook a major awareness campaign entitled In our Nature, which raised awareness in the community and developed a website for biodiversity (www.biodiversityni.com), suitable for interested but non-specialist readers. A number of voluntary bodies have their own programmes for awareness raising and	
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Six Spotted Burnet Moth on Bell Heather

	Northern Ireland Biodiversity Strategy Recommendations	Notes on each Recommendation
69	Engage influential sectors of society on a partnership basis to conserve biodiversity.	The Biodiversity Officers located within a number of councils have enabled this to happen through their stakeholder work which seems to have worked at a local level, while both QPANI and Translink have promoted this recommendation through their actions.
70	Review the Northern Ireland curriculum to provide an opportunity for all pupils to acquire an understanding of how biodiversity affects their lives and vice-versa.	Primary school curriculum (Key stages 1 and 2). New concept entitled The World Around Us. This includes animal adaptation, interdependence, life cycles, human influences, etc. but in the 114 page document, the word 'biodiversity' is not mentioned once. A number of other schemes and awards have been introduced, including Ecoschools' Learning outside the Classroom Manifesto, BBC's Breathing Places and a wide range of initiatives developed by NGOs and individual schools.
71	Include biodiversity as an element of all teacher training.	The Environmental Education Forum (EEF) runs Education for Sustainable Development days at all of Northern Ireland's teacher training establishments, training some 800 student teachers/year. Many of the workshops are biodiversity-based and are run by organisations such as the RSPB, UWT, National Trust, Forest Service, Colin Glen Trust, etc. The Department for Education and Learning (DEL) has been addressing this recommendation by working with EEF.
72	Develop a strategy and distribute guidelines to encourage community groups to participate in biodiversity conservation work.	This recommendation has not been implemented, but significant contributions have been made in this direction by individual local biodiversity officers in the context of their LBAPs.
73	Develop and implement a strategy for biodiversity education involving all main providers, both inside and outside the formal schooling system.	A variety of environmental schemes incorporate biodiversity education as a central theme, e.g. Ecoschools, Eco Unesco Young Environmentalist Awards and BBC Breathing Places. The Learning outside the Classroom Manifesto also places an emphasis on opportunities for young people to experience the natural world. However, there are funding difficulties with these programmes and the loss of environmental educators at some NIEA sites is of great concern.

NIBG COMMENT: Considerable progress and activity has taken place in this area of the Strategy, both in general awareness raising campaigns and through work by voluntary bodies and co-ordination by EEF. NIBG strongly welcomes this and notes that environmental education (formal and informal) is a vital aspect of achieving engagement with biodiversity. It is therefore with concern that NIBG learnt of the removal of funding for this work by NIEA. It is essential that the work continues and if it is no longer seen to be within NIEA's remit, it should be transferred to another department, probably DEL.



Northern Ireland Biodiversity Strategy Recommendations Notes on each Recommendation

Local action (Section 5.15)

74	Enhance local biodiversity conservation particularly though the development of Local Agenda 21 initiatives.	Through NIEA grant aid, 12 local authorities had appointed officers who have prepared or are in the process of preparing LBAPs. However, there are currently only 8 LBAP Officers in post with the majority of these appointments on a 3-year basis only. With the requirement of a Biodiversity Duty in the future, it will be important to ensure a real commitment to this work by all local authorities. QPANI and Translink have also appointed their own Officers.
75	Develop plans for urban green spaces to enhance local biodiversity.	A number of councils now have Open Space strategies in place including Belfast. The 'Green Flag Award' given to 3 parks in NI includes limited criteria for nature conservation. Biodiversity should be strengthened and promoted within these initiatives.
76	Provide advice on priorities for local biodiversity action.	Biodiversity Officers in place in some council areas, the Mournes and Lough Neagh wetlands.

NIBG COMMENT: A significant start has been made by the grant-aided system of LBAPs and local officers to develop and implement these. Many councils are continuing this work and some have made the posts permanent. The key issue for many is now the effective delivery of the plans, an issue we raised in our previous report. The Biodiversity Duty under the reformed Wildlife Order, should it be passed, should be integrated into the provisions of the RPA at an early stage.



Chapter 05 Outcomes for Northern Ireland's Biodiversity

5.1 Introduction

The Northern Ireland Biodiversity Strategy (NIBS) recommended 76 actions that were to be delivered across the country that would halt biodiversity loss and aid recovery. It is vital to ensure that these actions are delivered and that those responsible are held accountable for their delivery. However, the ultimate success of the NIBS will be judged by its basic target: halting biodiversity loss by 2016. In other words: did all this work make a difference?

To answer this, it is essential that biological outcomes are monitored. This enables practitioners to determine whether activities are succeeding in achieving, e.g. the recovery of a priority species or the favourable condition of an ASSI.

In this chapter we attempt to investigate changes in the status of habitats and species by reviewing data collected through surveys, monitoring and research programmes, and obtaining the opinions of experts. We begin by reviewing indicators developed by NIEA to report on broad trends for biodiversity and then review data on the status of habitats and species in Northern Ireland, especially those identified as priorities under the Strategy.

NIBG encountered considerable difficulty in assessing and interpreting much of the data provided. This is a matter of deep concern. In some areas it is difficult to place any confidence in the data provided, particularly when different bodies have generated widely differing estimates of the biodiversity resource still present. Where these difficulties have been encountered, they will be reported in the text below. NIBG considers that such conclusions reached in this report may only be regarded as tentative until access to adequate data permits a more thorough analysis of progress towards the 2016 target.

5.2 Biodiversity Indicators

In March 2008, NIEA published the first State of the Environment report for Northern Ireland (SoE, 2008). This report used a number of different measures (indicators) to build an initial picture of the changing state of our environment. Indicators present headline measures of change to the public and decision-makers and broadly monitor progress of biodiversity delivery in Northern Ireland. There were 30 indicators, four of which related specifically to biodiversity, including status of habitats and species.

The 2009 State of the Environment report (SoE, 2009) followed with no further data on priority habitats and species. In relation to priority habitats, the only new overall information available is from the estimates by Biodiversity Delivery Groups (see Section 5.3.2). Instead, two new indicators were introduced: Sites of Local Conservation Importance (SLNCIs), and Tree Preservation Orders (TPOs). This makes a total of six indicators between the two reports, and we report on these below.



5.2.1 Indicator BD1: Nature Conservation Designations

Table1: Total extent and increase in the extent of designated sites in Northern Ireland since 1998/99.

Designation	Area (Hectares) in 2008	Increase in area, 1998/99- 2007/08 (%)
ASSI	94,171	12.9
SPA	108,835	52.7
SAC	66,350	15.5
Ramsar sites	77,457	5.2

NIBG would make an initial comment that nature conservation designations are not a true indicator of the state of the environment. They are merely a measure of activities aimed at achieving a certain state. The total land area in Northern Ireland is 14,160 km2 (1,416,000 ha). Therefore approximately 6.7% of Northern Ireland is designated as an ASSI. It should be noted that there is a significant overlap of designated sites because European sites (SPA/SAC) are generally underpinned by national designations (ASSI). Offshore marine sites are not underpinned by ASSIs. As a result, data do not allow NIBG to assess the total area of Northern Ireland's land and waters that are actually covered by any statutory designation.

Addressing the Assembly Environment Committee in December 2008, Environment Minister Wilson stated that there are currently 256 ASSIs designated and that 440 would be designated by 2016 (we do not have the data to assess the area likely to be covered by this). There is a commitment to declare 75 new sites under the current Programme for Government. We welcome this commitment but there is clearly much to be done to secure completion of the ASSI network.

5.2.2 Condition of Features Within ASSIs

Data for Natura 2000 sites are only presented in the SoE 2008 report, so we are unable to comment on how their conditions have progressed. In respect of ASSIs, the NIEA is committed to ensuring that 95% of the features underlying the designation of internationally important wildlife sites and ASSIs are in favourable or unfavourable-recovering condition by 2016.

NIEA started site quality monitoring (known as condition assessment) in 2002 according to Common Standards Monitoring guidelines developed by JNCC. Under this, the habitat and species features of a site are assessed every six years. In March 2008 they had assessed 916 features on 195 ASSIs with the first report published in autumn 2008 (www.ni-environment.gov.uk/condition_of_ni_assis.pdf). The general results, focused on Natura 2000 sites, are presented in Table 2.

Table 2: The condition of designated sites in Northern Ireland, 2008(Note: ASSI figures exclude Earth Science features).

Designation features	Favourable condition	Unfavourable -recovering	Unfavourable
ASSI	62%	3%	35%
SPA	83%	-	17%
SAC	39%	10%	51%
Ramsar sites	84%	-	16%

A breakdown of the detailed condition of habitats and a selection of species features in the network is presented below (see Sections 5.3.4 and 5.4.2). Given the large number of sites in unfavourable condition, it is clear that NIEA face a major challenge in securing 95% features in favourable or unfavourable-recovering condition by 2016.

Recommendation 28 Government needs to ensure sufficient resources are made available for the designation, monitoring and management of the designated site network, particularly Areas of Special Scientific Interest (ASSIs). This resourcing needs to reflect the increased monitoring and management requirements as new sites are designated.

5.2.3 Indicator BD1: Sites of Local Nature Conservation Importance (SoE 2009 only)

Sites of Local Nature Conservation Importance (SLNCIs) are designated in accordance with Planning Policy Statement 2 (PPS2): Planning and Nature Conservation. They are important local sites of substantive biodiversity or geological value. The increase in the number of SLNCIs in Northern Ireland is shown in Figure 1. The stand-still between 2006 and 2007 is likely to be due to slow progress with the area plan process.

PPS2 states that the importance of SLNCIs will be carefully evaluated. If it is confirmed that a particular site is of local nature conservation importance, it is formally identified as such in a development plan, i.e. an area plan. Where such sites are identified, plans set out specific planning policies that will apply to development proposals on those sites. NIBG would also stress that numbers of proposed SLNCIs does not in itself constitute an indicator of actual biodiversity outcome - rather, it is an indicator of process.

Recommendation 29 Whilst reporting on designation of ASSIs and Sites of Local Nature Conservation Importance (SLNCIs) is extremely important as a measure of process, it is not an indicator of the 'state of the environment' itself, and therefore cannot be regarded as a biodiversity outcome. It would be better if future State of the Environment (SoE) reports, whilst referring to process matters, focused more closely on the actual biodiversity and environmental outcomes.

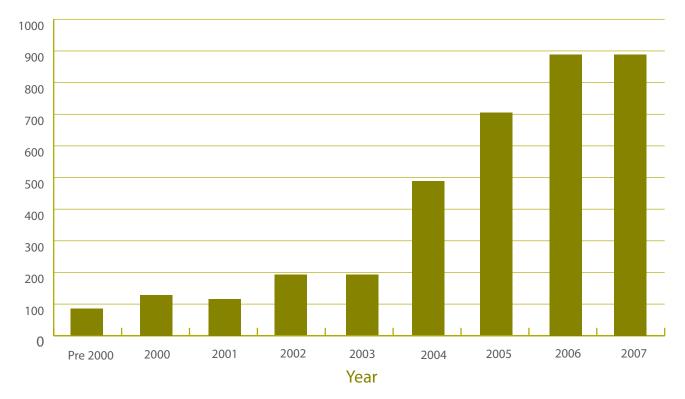


Figure 1: Number of SLNCIs proposed in area plans.

Up until 2000, 81 SLNCIs had been identified within area plans. Currently, there are 889, a large increase. However, this is misleadingly optimistic. Of these, only 137 have been formally adopted and therefore much work is required to secure the protection of the majority of candidate SLNCIs identified. NIBG is concerned that clear criteria were not employed in the original selection, and the long time interval between selection and ratification may result in loss or damage to sites.

While the identification and adoption of SLNCIs within area plans is a positive step, it is not clear what impact these measures have had upon biodiversity as there is no monitoring process. Data were not made available on whether planning permission has been refused due to the presence of an SLNCI or evidence on the loss or partial loss of sites due to development. PPS2 is currently under review and it is hoped the review will examine the effectiveness of SLNCIs and, if required, strengthen the status of these important sites.

Recommendation 30 Significant progress in adoption of SLNCIs is needed, together with their incorporation into Area Plans. Monitoring of their condition, together with measures giving protection from development, need to be established. It is essential that safeguards are built into PPS2 Planning and Nature Conservation. This must be reviewed as soon as possible (recommended above).

5.2.4 Indicator BD2: Priority Habitats

SoE (2008) assessed the status of 35 priority habitats between 2002 and 2005. Of these, 37% were increasing/ fluctuating, 14% stable/unknown/no clear trend and 49% declining. There was no assessment of the status of these habitats in SoE (2009).

5.2.5 Indicator BD3: Priority Species

The NIEA has also assessed trends between 2002 and 2005 for the 88 UK priority species that occur in Northern Ireland. Although there were insufficient data to assess trends for 58 species, on the remaining list 30% were increasing/fluctuating, 9% stable/unknown/no clear trend and 61% declining.

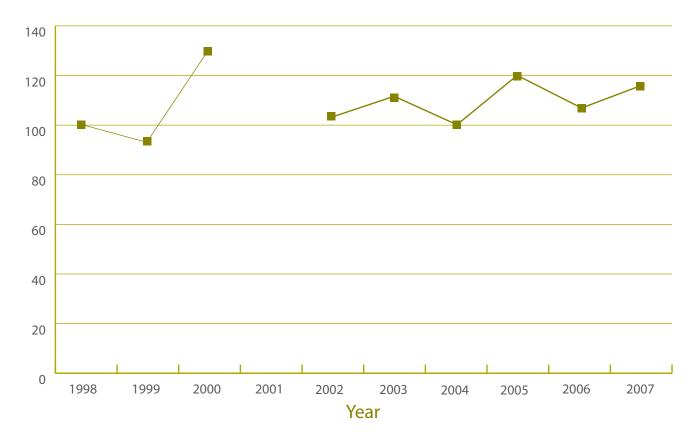
It is clear from the above indicators that there is much to do to secure the Executive's 2016 target and it is regrettable that no further data were available for the 2009 report. It would seem to be essential that regular reporting is established if progress towards that target, for either habitats or species, is to be assessed.

Recommendation 31 A consistent format for State of the Environment reports should be developed, enabling comparison between different years and therefore greater clarity on trends in biodiversity conservation.

5.2.6 Indicator BD4: Wild Bird Populations

Populations of wild birds are a good indicator of the broad state of biodiversity as they move between a wide range of habitats and, in general, a large volume of long-term data has been collected. However, in Northern Ireland there is a lack of data which reduces the effectiveness of this indicator. Figure 2 shows the change in the wild bird index in Northern Ireland since 1998.

Figure 2: Wild bird populations in Northern Ireland, 1998–2007 (Note: Data for 2001 were not available because of the foot and mouth epidemic. The SoE (2008) report presented the mean between 2000 and 2001, but in SoE (2009) this data point was omitted).





The data (based on breeding birds) used to create the index come from the BTO/JNCC/RSPB Breeding Bird Survey (BBS). In Northern Ireland, approximately 120 1km grid squares are surveyed each year. Because of the small number of squares surveyed in Northern Ireland, it is only possible to produce trends for the most widespread and numerous species. Many of the species that are scarce or declining in Northern Ireland are not covered by the BBS. Therefore we cannot accept the figure of a 17% increase in the wild bird population reported in SoE (2009) as a truly accurate measure of the complete situation.

The British Trust for Ornithology (BTO) has a target to increase the number of BBS squares surveyed to 150, a measure which should be supported given that other species will be covered as the survey is extended. If this is achieved it would be useful to split the statistics into key habitat areas, e.g. farmland, woodland, coastal, etc.

Recommendation 32 Support should be given to organisations co-ordinating the Breeding Bird Survey in Northern Ireland to increase the number of survey squares recorded and to allow more accurate assessments of scarce or declining species.

Information on trends is currently available for 28 species of which 17 have increased significantly since 1994, whilst none have declined significantly (see Table 3). Skylark, mistle thrush and house sparrow have declined between 1994 and 2007, but these trends are not statistically significant.

Among the greatest significant increases are those shown by garden birds, including dunnock, great tit, greenfinch and goldfinch. Starling, a priority species, increased by 41% in Northern Ireland between 2006 and 2007, and the species has shown a significant 89% increase since 1994. By contrast, starlings are declining rapidly across the rest of the UK.

Species	No. of squares	Trend (%), 2006-07	Trend (%), 1994-2007
Pheasant	30	15	237*
Woodpigeon	71	7	57*
Skylark	32	-14	-26
Swallow	73	-15	29
House Martin	34	-33	33
Meadow Pipit	58	-3	62*
Pied Wagtail	37	-17	35
Wren	79	11	107*
Dunnock	60	-21	208*
Robin	75	15	52*
Blackbird	74	4	74*
Song Thrush	65	0	29
Mistle Thrush	52	1	-14
Willow Warbler	68	27	112*
Goldcrest	38	36	175*
Blue Tit	66	17	100*
Great Tit	59	32	243*
Coal Tit	52	63	182*
Magpie	71	8	27
Jackdaw	64	27	19
Rook	64	25	14
Hooded Crow	69	39	136*
Starling	68	41	89*
House Sparrow	43	-6	-23
Chaffinch	77	19	79*
Greenfinch	45	2	226*
Goldfinch	34	62	199*
Linnet	30	-14	17

Table 3: Bird population trends in Northern Ireland during 2006–2007 and 1994-2007 (Priority Species are shown in italics, * indicates a statistically significant trend).



5.2.7 Conclusions on Biodiversity Indicators – Towards 2016

It is disappointing that the DoE has chosen to change the indicators it has adopted to measure the state of biodiversity in Northern Ireland. NIBG is concerned that although the condition of ASSIs and wild bird population indicators measure biological outcomes, the other indicators published in the SoE (2009) report measure process. The very useful priority species and priority habitats indicators published in SoE (2008) have been dropped. In addition, the lack of data to produce a comprehensive wild bird population index means that this is not a true indicator of the status of birds in Northern Ireland. Overall, the indicators published by the DoE in 2009 provide a confusing and inadequate measure of the status of biodiversity in Northern Ireland. NIBG wish to see a consistent and informative list of indicators adopted so that progress towards the 2016 target can be easily followed.

5.3 Habitats

Northern Ireland supports a rich and diverse range of habitats, from the expanses of intertidal mudflats in our sea loughs to the tracts of blanket bog in our uplands. The process of selecting priority habitats is outlined in Section 3.4.3 above. The following sections review data currently available on the status of broad-scale habitats and priority habitats in Northern Ireland.

5.3.1 Broad-scale Habitat Status

The Countryside Survey provides scientifically reliable evidence about the state of the Northern Ireland countryside. It is undertaken through field survey (an in-depth study of a sample of 1km squares) and the land cover map (satellite data forming a digital map of the different types of land and vegetation). Results from the latest survey in 2007 can be compared to data collected in 1998 to identify the rate of change in the area of broad habitats (some small-scale priority habitats cannot be surveyed by this technique; see Table 4).

Table 4: Changes in the area occupied by broad habitat types in Northern Ireland,1988-2007, as recorded by the Countryside Survey.

D II III				0/ 1
Broad habitat type	Area in 1998 (ha)	Area in 2007 (ha)	Change in area (ha)	% change
Broadleaved/Mixed & Yew woodland	63,507	81,699	18,193	+29
Coniferous woodland	62,135	60,617	-1,518	-2
Roads / Tracks & Hard verge.	29,449	30,951	1,503	+5
Arable and horticulture	57,213	48,917	-8,295	-14
Improved grassland	554,982	573,010	18,028	+3
Neutral grassland	263,902	23,1116	-32,786	-12
Calcareous grassland	1,765	1,802	37	+2
Acid grassland	13,324	10,369	-2,954	-22
Bracken - dense	3,084	2,645	-439	-14
Heath (Dwarf shrub)	13,909	16,751	2,842	+20
Fen, marsh & swamp (Wetland)	52,935	47,255	-5,680	-11
Bog	164,216	160,902	-3,314	-2
Standing open water (Waterbodies)	61,785	61,332	-453	-1
Rivers & streams	53,90	5,495	105	+2
Montane	<735	<735	n/a	n/a
Inland rock	7,969	5,450	-2,520	-32
Urban/Built up areas	56,847	74,098	17,251	+30
Supralittoral Rock	1,717	1,581	-136	-8
Supralittoral Sediment	1,859	1,995	136	+7



The results show a large increase in 'Broadleaf/Mixed and Yew woodland' and 'Heath', an increase in 'Urban/ Built up areas' and 'Roads and Hard verges' and a decrease in 'Neutral Grassland' and 'Acid Grassland'. There has also been a small increase in the area covered by 'Improved Grassland', whereas the land devoted to 'Arable and Horticulture' has declined rapidly. The area covered by wetland habitats has generally declined.

The results suggest that declines in some natural/semi-natural habitats may have resulted from increases in woodlands and human construction work, abandonment of land and an increase in improved grassland. Unfortunately, the definitions of broad-scale habitats chosen for this study do not correspond with definitions of priority habitats as identified under the UK and Northern Ireland biodiversity processes. Therefore it is not possible to measure trends for these specifically from this survey.

5.3.2 Priority Habitats Status

Biodiversity Delivery Groups (BDG) co-ordinate arrangements for monitoring and reporting on priority habitats. Table 5 shows the results of the assessments of the BDGs for a range of priority habitats, completed in late 2008. These data are probably the best estimate of the status of priority habitats in Northern Ireland and replace those identified in SoE 2008 (see Section 5.2.4). Whilst this data is applicable to the work of the delivery groups, it has been supplied by NIEA and DARD.

Priority Habitat Area (ha unless Trend **Responsible Delivery** otherwise stated) Group Oak woodland Status unknown Increased NI Native Woodland Group Mixed ash woodland Status unknown Increased NI Native Woodland Group Wet woodland Status unknown Increased NI Native Woodland Group Parkland Status unknown Unknown NI Native Woodland Group Reedbeds 2,096 No clear trend Wetland Biodiversity **Delivery Group** Fens Wetland BDG 2,499 Declining Coastal and floodplain Wetland BDG 4,782 Declining grassland No clear trend Blanket bog 139,796 Peatlands and Upland **Biodiversity Delivery** Group Lowland raised bog 21,106 Declining Peatlands and Upland BDG Upland heathland No clear trend 10,972 Peatlands and Upland BDG Lowland heathland No clear trend Peatlands and Upland 5,778 BDG Montane heath No clear trend <150 Peatlands and Upland BDG Species-rich hedgerows No clear trend Farmland Biodiversity 118,610 **Delivery Group** Status unknown Farmland BDG Cereal field margins Increasing Lowland acid grassland 674 No clear trend Farmland BDG Calcareous grassland 936 Stable Farmland BDG Lowland meadow <937 Farmland BDG Declining Farmland BDG Purple moor grass and 18,476 Declining

Stable

Farmland BDG

Table 5: Current trends in the status of priority habitats in Northern Ireland.

rush pasture

Limestone pavement

220

Priority Habitat	Area (ha unless otherwise stated)	Trend	Responsible Delivery Group
Coastal sand dune	1,500	No clear trend	Coastal and Marine Biodiversity Delivery Group
Coastal vegetated shingle	50	Increasing	Coastal and Marine BDG
Maritime cliff and slopes	500 km	Declining	Coastal and Marine BDG
Coastal marshland	250 ha	Declining	Coastal and Marine BDG
Sabellaria alveolata reefs	Status unknown	No information provided	NIEA
Coastal saltmarsh	250	No information provided	NIEA
Mudflats	10,985	No information provided	NIEA
Seagrass beds	1,150	No information provided	NIEA
Sheltered muddy gravels	Status unknown	No information provided	NIEA
Modiolus modiolus beds	1,600	No information provided	NIEA
Sabellaria spinulosa reefs	Status unknown	No information provided	NIEA
Tidal rapids	17 sites	No information provided	NIEA
Maerl beds	16 sites	No information provided	NIEA
Mud habitats in deep water	Status unknown	No information provided	NIEA
Saline lagoons	42	No information provided	NIEA
Serpulid reefs	Status unknown	No information provided	NIEA
Sublittoral sands and gravels	Status unknown	No information provided	NIEA
Lophelia pertusa reefs	No report received	No information provided	NIEA

The results predictably mirror those of the most recent Countryside Survey given that supporting data have, in many cases, been derived from the latter even though the definitions of the habitats in the Countryside Survey and Priority Habitats are different. The majority of woodland priority habitats have increased whereas many freshwater and coastal priority habitats have continued to decline. Although trends for many farmland priority habitats are increasing in line with the results of the Countryside Survey, many grassland priority habitats continue to decline. Interestingly, the increase in cereal margins has coincided with the general decline in arable habitat, as indicated by the Countryside Survey. The lack of information on the status of many woodland and marine habitats is a concern to NIBG.

Recommendation 33 NIBG recognises that the methodologies for broad-scale and priority habitats are different, but stresses that any means by which the definitions could be brought into alignment would achieve enormous benefits for monitoring. It should be the role of delivery groups, with their specialist knowledge and broad representation, to resolve this for each of their habitats.

Recommendation 34 Particular effort needs to be devoted to resolving the data gaps on many priority woodlands and almost all priority marine habitats.

5.3.3 Delivery of Priority Habitats Through Agri-Environment Schemes

The Department of Agriculture and Rural Development (DARD) agri-environment schemes have been operating since 1988, commencing with the Environmentally Sensitive Areas Scheme (ESA) in five key areas and since 1999/2000 the Countryside Management Scheme (CMS). Agri-environment scheme participation, which is voluntary, expanded rapidly in 2005.

The area of farmland in DARD agri-environment schemes has increased during the period 2004 to 2007 (see Table 6). However comparison with Table 7 where a total of 56,025 ha of Priority Habitat have come under agrienvironment management indicates that about 87.5% is non-priority, probably mostly intensive grassland. The ESA and CMS closed for applications in December 2006.

	Area under agri-environr	Area under agri-environment scheme agreement (ha)		
Year	ESA	CMS	Total	
2004	127,500	117,000	244,500	
2005	115,400	198,900	314,300	
2006	141,600	318,300	459,900	
2007	131,284	316,820	448,104	

Table 6: Area of land (ha) under agri-environment scheme agreements.

Many Habitat and Species Action Plans rely heavily on DARD agri-environment schemes for delivery of plan targets. Agri-environment scheme development has been linked to the delivery of these plans. Table 7 shows the area under DARD agri-environment scheme agreement for a selection of Priority Habitats. The percentage of the area of Priority Habitat under agri-environment scheme agreement is also shown.

Priority Habitat	HAP estimated total area (ha)	Area under agri-env scheme agreement (ha)	% HAP area in agri- environment schemes
Upland Heathland	10,972	3,939	36
Blanket Bog	140,000	38,302	27
Lowland Raised Bog	21,106	5,031	24
Mixed Ashwoods	3,430	2,811	82
Oakwood	2,350	682	29
Wet Woodland	2,600	1,520	58
Parkland	1,100	2,784	253
Calcareous Grassland	1,156	956	83

Table 7: Coverage of Priority Habitats by agri-environment schemes, as of 31 December 2007.

DARD Note: A large area of upland heathland in the Mourne Mountains is under government ownership and is not eligible for agri-environment schemes. The agri-environment scheme areas listed for blanket bog includes both blanket bog and wet heath. In the first ESA Scheme, no differentiation of heather moorland and farm woodland types was made. As these agreements end after 10 years, transfers to a new scheme will result in more accurate classification of moorland and woodland habitats. Parkland HAP estimates require review as DARD agri-environment schemes parklands are all referred with management plans agreed with NIEA. These exceed the HAP defined area.

DARD agri-environment schemes have been monitored by QUB since the introduction of the original ESA schemes in the late 1980s. Within the ESA scheme, monitoring has shown that overall, habitats have been maintained and in a few cases improved because of scheme participation. CMS monitoring has detected an increase in rush and scrub cover on species-rich grasslands and other wetland sites which may indicate decreased grazing pressure. Blanket bog is taking time to recover from overgrazing, whereas degraded heath is already showing positive recovery. NIBG has however queried why invertebrate numbers and diversity monitoring had not actually shown a recovery, achieving improved species biodiversity because of this (see NIBG Minutes, 15 November 2006, Item 2). This point remains unresolved, but NIBG looks forward to further results from the monitoring programme which may offer an explanation.

5.3.4 Condition of Priority Habitat Features on ASSIs

The results of the ASSI condition assessment for habitat features show that although over 36.7% of features are in favourable condition, more than half are in unfavourable condition (see Table 8 below). Only 34% of habitat features across the whole of the UK are in unfavourable condition. Reasons for unfavourable condition on ASSIs are varied and include inappropriate grazing, changes in agricultural practices, presence of invasive species, drainage and water quality.

There are marked differences between the overall conditions of different Priority Habitat features. For example, all mudflats are in favourable condition whereas most oak woods and mixed ash woods are in unfavourable condition. By comparing these data with those collected for the extent of habitats, it is clear that increases in extent are not always mirrored by improved condition for corresponding features identified under the ASSI programme. For example, although the extent of oak woods may be increasing, much remains in unfavourable condition within the ASSI network. For many declining habitats, the unfavourable condition of features is a serious concern, e.g. for fen and purple moor-grass and rush pasture.



Table 8: The condition of habitat features in the ASSI network.

5.3.5 Conclusions – Towards 2016

Given that the Countryside Survey defines habitats differently from those used in Northern Ireland and UK Habitat Action Plans, it is not possible to accurately measure the status of Priority Habitats in Northern Ireland. An effective monitoring programme for Priority Habitats across the country is urgently required if we are to report accurately on the status in the future. This would usefully inform the Priority Habitats indicator published in SoE (2008) but omitted in SoE (2009). However, the continued loss of unimproved grasslands and wetland habitats as identified by the Countryside Survey is of great concern to NIBG. Even on designated sites, the unfavourable condition of so many Priority Habitat features across the network is a major area of concern to NIBG. It remains unclear whether the NIEA's target to improve the condition of these features can be delivered (see Section 5.2.2).

5.4 Species

NIBG is tasked with reporting on the progress of work for Priority Species. However, NIEA made it clear that it was impractical, and an excessive strain on resources, to submit details of all 271 Priority Species for this report. We are worried that no effective reporting system on the status of these species has been developed but we accept NIEA's basic concerns. Therefore, two components were agreed to illustrate and evaluate the current situation for Priority Species:

- A selection of 18 'exemplar species' would illustrate outcomes of the various management initiatives over the last four years. Whilst we accepted this arrangement, we remain concerned that it is an extremely small sample by which to assess progress, given that the Strategy is halfway towards its target date; and
- Assessment of species features within ASSIs and agri-environment schemes.

5.4.1 Exemplar Priority Species

Exemplar Priority Species were selected by NIBG in agreement with NIEA to cover the range of habitats represented by the Biodiversity Delivery Groups, established to ensure delivery of the Northern Ireland Biodiversity Strategy. Data on the species selected was sourced from the NIEA and from the Habitas website. Tables in Sections 5.4.1.1 to 5.4.1.5 follow a 'traffic light' scheme: RED – status deteriorated; AMBER – Status variable or inadequate data; GREEN – status improved. Further details on these species can be obtained from www.habitas.org.uk/priority.

5.4.1.1 Farmland Species

Curlew Species Action Plan	Decline in breeding population by 58% during 1987- 1999, considered to be still declining.
Irish Lady's Tresses All-Ireland Action Plan	All-island population considered to be stable, but real reduction in the number of sites in the Lough Neagh basin. However, new sites found elsewhere.
Pink Waxcap Dependant on HAP	Northern Ireland is UK stronghold, but no data to indicate trends.
Small Blue No Action Plan	No sightings on one remaining site since 2001, feared extinct. Further searches proposed.

5.4.1.2 Woodland Species

Killarney Fern Species Action Plan	Gametophytes from a number of sites in Fermanagh, sporophytes from just two.
Red Squirrel All-Ireland Action Plan	Continued decline since publication of Action Plan – often replaced by grey squirrels.
Small Amber Snail Dependant on HAP	Possibly extinct around Lough Neagh, considered in decline at several Fermanagh sites in 2008.
Irish Whitebeam No Action Plan	True status unclear, surveys planned.

5.4.1.3 Coastal/Marine Species

Roseate Tern	
Species Action Plan	

Arachnanthus sarsi Dependant on HAP

Harbour Porpoise No Action Plan 4 nests in Larne Lough, population apparently stable at low level.

Recorded around Rathlin, but inadequate data to determine status or trend.

Insufficient data to determine its status or trends in Northern Ireland.

5.4.1.4 Uplands and Peatlands

Hen Harrier Species Action Plan	Population estimated at 50-60 pairs, likely to be increasing.
Red Grouse Dependant on HAP	220 pairs possibly, appears to have contracted in recent decades.

Marsh Saxifrage No Action Plan Garron Plateau only site, yet data on status not available.

5.4.1.5 Freshwater and Wetland Species

River Water Crowfoot Species Action Plan	Limited to Six Mile Water, status unclear.
Pollan All-Ireland Action Plan	Endemic to Ireland, extinct in Upper Lough Erne, declined in Lower Lough Erne, common in Lough Neagh.
White-Clawed Crayfish Dependant on HAP	Northern Ireland (& Rol) last European stronghold. Extensive research and breeding underway. Localised declines.
Water Violet No Action Plan	Distribution near Downpatrick contracted, now confined to National Nature Reserve.

While accepting that the exemplar species represent a very limited sub-set of Priority Species, the trends observed are of great concern, notably the fact that based on available data, over half of the exemplar species are either declining, at an extremely low level or, in the case of the small blue, feared extinct in Northern Ireland. Another point of note is that for those species with a SAP, many if not all of the action points are either running years behind schedule or have not started at all, bringing the value of investing considerable time and effort agreeing these targets into question. This is borne out by the fact that from this small sample the presence of an action plan appears to make little difference to the fate of the species.

Recommendation 35 Any future review or value judgement of the priority species in NI should contain a critique of the quality of the data on which the review is based. Such a critique will highlight areas of greatest data deficiency.

Recommendation 36 NIEA should prioritise actions for priority species that are known to be in decline or at very low population levels.

Recommendation 37 The investment of considerable resources in the development of Species Action Plans must be reviewed to ascertain if it is an effective use of limited resources.

5.4.2 Condition of Species Features in ASSIs

The condition of ASSIs is monitored on a six-yearly cycle with the first cycle completed in March 2008. In total, 916 ASSI qualifying features were assessed from 195 ASSIs (sites designated during a reporting cycle do not form part of the assessment until the next cycle). Of the 493 species features assessed, 383 (77.6%) were in a favourable condition, 108 unfavourable and 2 classed as unfavourable-recovering.

These figures conceal considerable variation between species-groups, linked to the considerable disparity of representation of different taxa in the ASSI suite. For example there are 341 monitored features relating to birds, whilst the entire plant kingdom is represented by just 49 monitored features. The majority of bird features on ASSIs are in favourable condition (many relating to seabirds, breeding cliffs and mudflats), while some other species groups, notably vascular/non-vascular plants and fish, have a much higher proportion in unfavourable condition (see Table 9).

Taxonomic group	Condition			
	Favourable	Unfavourable Recovering	Unfavourable	
Birds	281 (82.4%)	0	60 (17.6%)	
Butterflies	5 (71.4%)	0	2 (28.6%)	
Dragonflies	3 (100%)	0	0	
Fish	2 (50%)	0	2 (50%)	
Mammals	11 (100%)	0	0	
Non-vascular plants	3 (25.0%)	2 (16.6%)	7 (58.3%)	
Other invertebrates	60 (76.9%)	0	18 (23.1%)	
Vascular plants	18 (48.6%)	0	19 (51.3%)	

Table 9: Condition of species features on ASSIs in Northern Ireland, 2008.

If the ASSI condition monitoring is to be an effective indicator of the status of the Priority Species, then the selection of indicators must be reviewed. A grouping of 89% of Priority Species is matched by 30% of the monitored indicators in the ASSI network. This represents a massive imbalance between species groupings of concern and monitoring effort being assigned to them. Thus the value of using the ASSI condition monitoring dataset as a means of assessing the overall status of Priority Species must be questioned.

5.4.3 Species Conclusions

Reporting on the effectiveness of any strategy in halting the loss of any species is impossible without adequate targeted data. There appears to be a lot of monitoring undertaken by NIEA and others but attempting to extract useful information on Priority Species for the purpose of this report is extremely difficult if not impossible. A comprehensive suite of surveys to monitor Priority Species is urgently required to help measure progress towards the 2016 target. Data from these surveys would usefully inform the Priority Species indicator published in SoE 2008 but omitted in 2009.

Recommendation 38 All data collection programmes should be reviewed across government departments in an effort to put more focus on priority species, with improved balance between taxa.

5.5 Rare Breeds and Cultivars

There is limited information on the status of rare breeds of both livestock and fruit/vegetables in Northern Ireland. The Strategy (Section 5.12, Recommendation 62) stated that no full audit of genetic varieties existed and recommended this take place together with a review of the current arrangements for their conservation, with lead responsibility lying with DARD. Regrettably none of this has taken place and it is therefore impossible to assess whether trends in maintaining rare breeds and cultivars are favourable or not.

There is, however, support under NICMS for traditional orchards, although the extent to which this secures the future of native varieties is unclear. The Irish Moiled Cattle is now recognised as being a breed indigenous to Northern Ireland and is supported under the NICMS. In all, there are three breeds of cattle native to the island of Ireland - Irish Moiled, Dexter and Kerry. All three breeds are supported under Rural Environmental Protection Schemes (REPS) in the Republic of Ireland. Table 10 shows the current status of these cattle in Britain and Ireland.

Rol	GB	Total
66	432	1,168
199	15,360	16,275
,136	20	1,159
,801	15,812	18,602
((66 99 136	66 432 99 15,360 136 20

Table 10: The populations of native cattle in Britain and Ireland.

The data presented in Table 10 represents totals and includes calves, bulls, bullocks and other non-breeding stock. The female breeding stock represents approximately half of these figures. The total native breed cattle population in Northern Ireland is 989 out of a total 1,622,541 of all breeds of cattle in the June 2008 census. This means that only 0.06% of the cattle in Northern Ireland are native to this island, but we do not have the data to indicate any trends.

Recommendation 39 Without data it is difficult to assess the status of most rare breeds and cultivars. It is therefore impossible to assess progress of this sector towards the 2016 target. A comprehensive monitoring programme should be put in place as soon as possible.

Recommendation 40 It is essential that, as a matter of urgency, DARD fully meet their agreed commitment under Recommendation 62 of the NI Biodiversity Strategy.

5.6 Conclusions

The results of this very basic review of the biological outcomes for biodiversity demonstrates that much work is still required to halt our losses of biodiversity and meet the 2016 target. The indicators developed by NIEA show that whilst progress has been made in designation and achieving favourable condition of our designated sites, there remains a massive challenge to complete the network and improve the condition of habitat and species features. The large proportion of SLNCIs still not confirmed leaves these sites threatened, especially with the area plan process proceeding so slowly. It is good news that the wild bird indicator shows many common species increasing, yet the paucity of data means that many threatened and rare species (covered by this method in Britain) are missing and thus the trends should be treated with caution.

A more detailed analysis of the data on land-use shows mixed fortunes for natural and semi-natural habitats. The increase in many woodland priority habitats is good news yet the future for many wetlands and peatlands remains uncertain as they continue to decline. The unfavourable condition of many of these habitats within the ASSI network is also concerning, especially given that these are supposed to be the very best sites of their type in the country. However, the increasing extent of agri-environment schemes across the country provides much hope that if implemented correctly they can offer a management solution for many sites within and outside the ASSI network.

In contrast to habitats, there are too few data to determine the trends for many Priority Species. Although the national populations of the roseate tern and red squirrel are surveyed regularly, little is known about the status of, for example, the harbour porpoise or pink waxcap. There is an urgent need for data to enable the NIEA to assess species' status with accuracy, especially for those with SAPs. However, it is clear that many of the Priority Species we sampled for analysis are either in trouble or lacking data for any conclusion. Only the hen harrier appeared to be doing well, benefiting from concerted conservation action. However, the favourable condition of so many species features within the ASSI network (even noting the caution expressed above) is excellent news and demonstrates the values of the protected areas network. They show that conservation action can work if it is targeted and resourced adequately and offers much hope to the future for other species and habitats.

Common Blue Butterfly Rose Muir

Chapter 06 Climate Change & Northern Ireland's Biodiversity

6.1 Introduction

NIBG's primary function is to aid the delivery of

the Northern Ireland Biodiversity Strategy. It was signed off by the Minister for the Environment in 2002, but had been in preparation since 1996 and was completed in 2000. Scientific and wider concerns about global warming were developing but had not yet emerged as the major issue it has now rightly become. As a result, climate change did not feature in the Biodiversity Strategy. There is now international realisation that biodiversity and climate change are irrevocably interrelated.

"It will not be possible to halt the loss of biodiversity without addressing climate change. But neither can we tackle climate change if we fail to protect the ecosystems that help us mitigate and adapt to climate change."

Stavros Dimas, Member of the European Commission, responsible for the environment

For NIBG to ignore that situation, in the face of overwhelming evidence of existing and predicted climate change impacts on biodiversity, would be perverse. Indeed, during the presentation of NIBG's first report (2005) to the Council for Nature Conservation and the Countryside (CNCC; 12 Jan 2006) recommended that NIBG address this gap and examine the impacts of climate change.

Accordingly, climate change impacts on biodiversity have formed an increasing component of NIBG's deliberations (although we stress that the changes and losses reported in the previous chapter are largely due to other causes). Most notably, in partnership with the Republic of Ireland's Biodiversity Forum, we hosted a major conference in Newry in November 2008 – Ireland's Biodiversity in a Changing Climate. This was initiated by the preparation of a briefing paper (Biodiversity and Climate Change in Ireland commissioned by Comhar (Sustainable Development Commission; www.comharsdc.ie). Authorities on different aspects of biodiversity assessed the present situation and proposed policies and actions that could be undertaken by the two governments. The full conference report will be made available on the new NIBG website which we hope to have launched later this year. In the meantime paper copies are available on application to the NIBG Secretariat (NIBG@nienvironmentlink.org).

NIBG and the Forum have agreed to take the outcomes of the conference to their respective governments. The present chapter initiates this process in Northern Ireland. We hope that the Northern Ireland Executive will examine the recommendations carefully and take action, whilst at the same time liaising with its counterpart in the Republic on those matters that can only be achieved through collective action by both administrations.

It is vital that Northern Ireland plays its own part in mitigating the anthropogenic contribution to global warming and halting then reversing these dangerous trends. However our report, consistent with our role, focuses on biodiversity itself and how we can help it to adapt and survive, in recognition that whatever mitigation occurs, a substantial shift in our climate is already inevitable. A number of these measures would also help to absorb excess carbon dioxide.

This chapter summarises the evidence for climate change in Northern Ireland, and tabulates the major impacts on our biodiversity, together with the consequences on the most relevant sectors of human activity. It then reviews the major legislative and policy drivers, doing so at EU, UK and Northern Ireland levels. Finally it documents the main recommendations emerging from the climate change conference and concludes with recommendations to government for action and next steps.

6.2 Evidence for Climate Change in Northern Ireland and its Impacts on Biodiversity

There is a wide body of evidence that climate change is taking place and that biodiversity has already been adjusting to it, and continues to do so. Below are examples of this evidence and relevant predictions based on the best current evidence. Other sources, including those referred to above, give much further evidence. Evidence of climate-linked change in Northern Ireland includes:

- State of the Environment Report for Northern Ireland, March 2008: Fig. AC17 (p50) presents mean annual temperature measurements since 1844 recorded by Armagh Observatory, "The 1990s have seen the mean annual temperature rise to its highest temperature levels since records began";
- Sustainable Development Strategy for Northern Ireland, May 2006: Page 92 quotes a range of statistics supporting evidence of climate change in Northern Ireland, including, "9 of the 15 warmest years recorded since 1841 have occurred since 1990";
- DoE (NI) Climate Change Indicators for Northern Ireland, 2004 (www.ni-environment.gov.uk/cci.pdf): Evidence includes: hotter, drier summers, fewer cold days, less snow, a northwards shift in the Gulf Stream, longer growing seasons and earlier sightings of swallows and large white butterflies. The document stresses the robustness of these features as indicators of climate change;
- Repeated occurrences of northward spread into Northern Ireland of more southerly species in both terrestrial and marine environments; and
- Acidification of oceans as a consequence of climate change already recorded; cited as a key issue by Professor Beddington to the House of Commons Select Committee on Innovation, Universities, Science and Skills. In addition to global impacts, changes in nutrient and trophic processes may have profound local effects in maritime countries like Northern Ireland.

Predictions for climate change include:

• Shifting Shores by National Trust (NI): Sea level rise of 85cm-100cm is likely during this century, accompanied by increased frequency of storm surge and extreme wave events. These could result in increased erosion and flooding, loss of important habitats and wildlife, increased land instability and damage to infrastructure.

- Climate change conference briefing paper, Biodiversity and Climate Change in Ireland, from Ireland's Biodiversity in a Changing Climate conference, 2008 – examples of key predictions:
 - Average of 550km north-easterly range shift for European bird species predicted in relation to a 3°C temperature increase by 2100;
 - Northwards shift of about 1100km for Atlantic zooplankton along the continental shelf;
 - Changes in species' distributions with altitude and changes in phenology;
 - Presentations highlighted climatic changes and impacts on biodiversity at species, habitat and process levels. The key elements are tabulated in Table 11 below; and
 - The impact of biodiversity changes on a range of economic and countryside interests was discussed and summarised in Table 12 below.

These predictions are among the most recent, however many reports including those from the Climate Change Conference in Denmark in March 2009, highlight evidence that the process of climate change is happening at a faster rate than many predictions accounted for (see http://en.cop15.dk).

Table 11 summarises the wide range of impacts on Northern Ireland's biodiversity expected, and beginning, to be evident. Moreover, it is self evident that many economic and social interests in Northern Ireland and everywhere else are dependent or related to biodiversity in some way. Table 12 suggests ways in which climate change-induced impacts on biodiversity will impact on human interests in Northern Ireland.

Table 11. Key elements of climate change and predicted impacts on species and habitat ecology in Northern Ireland, and on inter-species and species-habitat relationships.

Ecological & other biodiversity impacts	Changes in phenology	Impacts on migrations	Changes in trophic relationships	Spatial shifts in species/ habitat distributions	Altitudinal changes in distributions	Responses to hydrological changes	Influence on invasive species
Climate change effects							
Warming NI land	\checkmark		\checkmark	\checkmark	\checkmark		\checkmark
Warming NI seas	\checkmark	\checkmark	?	\checkmark	N/A	N/A	\checkmark
Wetter winters				\checkmark		\checkmark	?
Drier summers	\checkmark			\checkmark		\checkmark	?
Increased frequency of extreme events				\checkmark	\checkmark	\checkmark	
Shifts in prevailing winds	\checkmark	\checkmark		\checkmark	\checkmark		
Sea level rise				\checkmark		\checkmark	
Climate changes elsewhere	\checkmark	\checkmark	\checkmark				

NI Economic & conservation interests	Agriculture	Fisheries/ Aquaculture	Forestry	Site protection	General biodiversity/ wildlife legislation	Catchment management ("good ecological status")
Ecological impacts						
Changes in phenology	Longer growing season, changed harvesting times, impacts on pollination	Changing closed seasons	Longer growing season	Impacts on site features	Changes to open/closed seasons	Seasonal impacts, e.g. fish migration
Impacts on migrations				Impacts on site features	Changes to open/closed seasons	Impacts on salmon, trout and eel migration
Changes in trophic relationships	Impacts on pollination	Impacts on plankton and food chain		Impacts on site features		
Spatial shifts in species/ habitat distributions	Changes in crop species and varieties	New commercial species, loss or change in existing ones	Changing tree species	Impacts on site features & boundaries, arrival of new priority species and competitors	Likely adjustment to Schedules of Wildlife Order to accommodate new & lost species	Impacts on good ecological status relating to key features of catchment
Altitudinal changes in distribution	Uplands become more productive?	N/A		Impacts on site features and boundaries	Loss of some upland species	Impacts on headwater ecology
Responses to hydrological changes	Floodplain agriculture, e.g. lowland wet pastures	Management of inland fisheries/ waterways	Management and drainage of forest sites	Impacts on site features		Many – species composition, floodplain and river bank ecology
Influence of invasive species	Crop/ livestock diseases and pests	Increased parasite/ predator burden on commercial species	Increased incident of tree parasites/pests	Increased	Adjustment of measures to control invasive species	New species arrivals leading to competition, predation and parasitism

Table 12. Impacts of climate-induced changes to biodiversity on human interests(economic, agricultural, fisheries, site protection and other interests) in Northern Ireland.

6.3 Climate Change Drivers for Biodiversity Action in Northern Ireland

Climate change is now internationally recognised as the greatest threat to mankind and to our natural

heritage. There is consensus that global warming is largely caused by human activity, especially from release of extra greenhouse gases, notably carbon dioxide. Recognition of this has given rise (and will continue to do so) to urgent measures to curtail emissions and these require implementation at all administrative levels. We welcome the efforts of government to reduce emissions. However, as climate change is already occurring, we also need to help our biodiversity to survive and adapt to the changes.

Drivers to support biodiversity may be considered at EU, UK and Northern Ireland levels of action, as well as at all-Ireland levels where relevant, e.g. in relation to the Water Framework Directive.

6.3.1 Drivers at EU Level

Selected extracts from the EU Biodiversity Communiqué (2006):

"POLICY AREA 3: Biodiversity and climate change; objectives and targets, with actions prescribed for implementation at Member State level.

Objective 9: To support biodiversity adaptation to climate change.

"There is broad scientific and political consensus that we have entered a period of inevitable and unprecedented climate change. Impacts on biodiversity in the EU are already measurable. Climate change has the potential, over a period of a few decades, to undermine our efforts for the conservation and sustainable use of biodiversity..... Protection of biodiversity can help limit atmospheric greenhouse gas concentrations because forests, peatlands and other habitats store carbon. Policies will also be needed to help biodiversity adapt to changing temperature and water regimes. This requires in particular securing coherence of the Natura 2000 network. Care must also be taken to prevent, minimise and offset any potential damages to biodiversity arising from climate change adaptation and mitigation measures."

HEADLINE TARGET: Potential for damaging impacts, related to climate change, on EU biodiversity substantially reduced by 2013.

The **headline target** is implemented via a series of sub-targets. Those at Member State level most relevant to Northern Ireland are summarised below, with summaries of key actions in italics:

A9.3 TARGET: Climate change adaptation or mitigation measures from 2006 onwards delivering biodiversity benefits, and any negative impacts on biodiversity prevented or minimised.

A9.3.1: Impact assessment of new policies at Member State level where appropriate, application of strategic environmental assessment and environmental impact assessment where required to plans, programmes and projects.

A9.3.2: Carry out sustainability impact assessments, ensure decision-making takes account of findings in relation to biodiversity impacts in order to prevent and minimise negative impacts.

A9.4 TARGET: Resilience of EU biodiversity to climate change substantially strengthened by 2010.

A9.4.1: Participate in development of programme (of priority actions to support biodiversity adaptation to climate change in the EU).

A9.4.2: Participate in assessment and apply measures to strengthen coherence and connectivity (Assess, on the basis of available scientific evidence, and substantially strengthen coherence, connectivity and resilience of the protected areas network (Natura 2000 and non-Natura protected areas) in order to maintain favourable conservation status of species and habitats in the face of climate change by applying, as appropriate, tools which may include flyways, buffer zones, corridors and stepping stones (including as appropriate to neighbouring and third countries), as well as actions in support of biodiversity in the widerenvironment).

A9.4.3: Contribute to assessment through regional and site-specific climate impact assessment (Make a preliminary assessment of habitats and species in the EU most at risk from climate change, detailed assessment and appropriate adaptation measures prepared, commence implementation)." Readers should also bear in mind that a wide range of Directives including the Habitats Directive and the Birds Directive have provisions whose implementation is impacted by, or could contribute to, work on supporting biodiversity in the context of climate change.

6.3.2 Drivers at UK Level

The most significant driver is now the UK Climate Change Act 2008. For full details see: www.defra.gov.uk/environment/climatechange/uk/ legislation/provisions.htm.

The Act contains a wide range of fundamental measures to reduce the climate change impacts caused by the UK and to adapt to its effects (recognising that these are in progress already).

Among the key provisions of the Act are:

- Legally binding targets: Greenhouse gas emission reductions through action in the UK and abroad of at least 80% by 2050, and reductions in CO2 emissions of at least 26% by 2020, against a 1990 baseline. The 2020 target will be reviewed soon after Royal Assent to reflect the move to all greenhouse gases and the increase in the 2050 target to 80%; and
- On adaptation the government must report at least every five years on the risks to the UK of climate change, and publish a programme setting out how these impacts will be addressed. The Act also introduces powers for government to require public bodies and statutory undertakers to carry out their own risk assessments and make plans to address those risks.

The Act covers the whole of the UK, and the provisions in Section 60 for Northern Ireland relate to those for the UK as a whole, see box:

"Programme for adaptation to climate change: Northern Ireland

(1) It is the duty of the relevant Northern Ireland department to lay programmes before the Northern *Ireland Assembly setting out:* (a) the objectives of the department in relation to adaptation to climate change, (b) the department's proposals and policies for meeting those objectives, and (c) the time-scales for introducing those proposals and policies, addressing the risks identified in the most recent report under Section 56; (2) The objectives, proposals and policies must be such as to contribute to sustainable development; (3) The second and each subsequent programme under this section must contain an assessment of the progress made towards implementing the objectives, proposals and policies set out in earlier programmes; (4) Each programme under this section must be laid before the Northern Ireland Assembly as soon as is reasonably practicable after the laying before Parliament of the report under Section 56 to which it relates; and (5) The relevant Northern Ireland department must send a copy of each programme under this section to the other national authorities.

(In this Act, 'the relevant Northern Ireland department' in relation to a matter or provision, means the Northern Ireland department responsible for the matter or, as the case may be, for the matters to which the provision relates)"

NIBG is of the view that a key element of adaptation in the Act is related to biodiversity, both through responsibilities for sustaining biodiversity in a wide range of legislation and also because biodiversity can play a key role in mitigating adverse impacts of climate change. Biodiversity should therefore be central to departmental compliance with the Act.

Recommendation 41 Government should ensure that its actions to address the requirements of the Climate Change Act 2008 include requirements to maintain biodiversity and support its adaptation to the effects of climate change.

6.3.3 Drivers at Northern Ireland Level NI Sustainable Development Strategy:

"p100: 'Develop and implement changes to government policies and strategies to address adaptation issues' (SoE, March 2008).

p51 'A significant concern is that there is as yet no conclusive data that Northern Ireland's greenhouse gas emissions are declining at a rate consistent with targets in the Northern Ireland Sustainable Development Strategy. Therefore, a key challenge is to ensure that greenhouse gas emissions decrease year on year and that progress is made in fulfilling the climate change commitments made in the Strategy. There is also a need to ensure that the effects of future climate change are taken into account in the long-term planning for services, environmental protection, construction and business in Northern Ireland.'

p52 'Research into Northern Ireland's vulnerability to climate change has recommended two responses. The first is to mitigate the impact by stabilising or reducing greenhouse gas emissions into the atmosphere. The second is to take account of unavoidable consequences and adapt to climate change already happening by introducing plans, policies and procedures for adaptation.....The UK government commitment to introduce a Climate Change Bill will further develop mechanisms to address this issue in future in Northern Ireland.'"

Departmental Biodiversity Implementation Plans (BIPs): Actions in the Northern Ireland Biodiversity Strategy and the EU Biodiversity Communiqué have been included in the BIPs. The latter has identified targets to address climate change issues (see above). NIBG has given its strong support to incorporation of a statutory Biodiversity Duty in the forthcoming revised Wildlife (N Ireland) Order (see Section 3.3). DoE (NI) has indicated that it is willing to support and guide other departments in undertaking and developing their BIPs, while NIEA frequently give guidance in response to departmental enquiries.

Recommendation 42 Particular advice should be given on measures within Biodiversity Implementation Plans (BIPs) to reduce climate change impacts on biodiversity and on opportunities to enhance biodiversity where possible, including the resilience of ecosystems which play a major role in mitigating the consequences of climate change.

6.4 Main Outcomes of the Biodiversity and Climate Change in Ireland Conference

The conference agreed that action, including harmonisation of adaptation policies, is required on an all-island basis to help biodiversity adapt to climate change. The main recommendations are summarised on the next page. Additional and more detailed points are provided within the speaker abstracts.

"Research

- Further development of the evidence base to support policy development is required. This should be achieved through research which combines modelling with experimentation;
- Strategic linkages with research fora should be developed to improve baseline data on the distribution, status and threats for species and habitats;
- A climate change vulnerability assessment for listed habitats and species should be undertaken;
- Greater research is required into the impact of and response to invasive species; and
- Further research is required on the impact of renewable energy crops on biodiversity and nutrient bio-remediation.

Monitoring

- Identification of indicator species most relevant to Irish biodiversity is required and an indicator species monitoring network established;
- Increased levels of monitoring and vigilance are required in relation to plant and animal health and the presence/ status of invasive species;
- A marine climate change monitoring programme should be established to monitor changes in marine food webs relating to climate change; and
- Climate change impacts should be fully integrated into invasive species policy, plans and monitoring programmes.

Sites

- Continued protection of our important sites for nature conservation is required, and strengthened where appropriate;
- Existing sites should be enlarged to accommodate the climatic and habitat variability that would support indigenous species;
- New sites/habitats should be designated to replace those lost and to buffer habitats from the negative edge effects of development or intensive land-use;

• and climate change considerations should be integrated into management plans for the Natural 2000 network.

Planning

- The Strategic Environmental Assessment Directive should be fully implemented to ensure incorporation of biodiversity and climate considerations into all sectoral policies; and
- Guidelines for regional and local planning should be developed that incorporate biodiversity and climate change considerations.

Renewable Energy

- A Strategic Environmental Assessment of renewable energy policy should be undertaken;
- Sustainability Impact Assessments (SIAs) should be carried out to ensure impacts on biodiversity are taken into account in the development of renewable energy resources; and
- The production of biofuel crops which do not have a negative impact on biodiversity should be encouraged with support for energy crops targeted at the use of marginal land."

NIBG strongly supports these recommendations. Although they were made on the basis of an all-Ireland conference and apply to the biodiversity of the entire island, they are equally applicable to the objectives of each administration and are therefore strongly commended to the Northern Ireland Executive.

Recommendation 43 Government should use the recommendations from the Biodiversity and Climate Change in Ireland conference as a basis for addressing the impacts of climate change on biodiversity in Northern Ireland, particularly in the context of a working group on climate change (see below).

Recommendation 44 NIBG also recommends the following additional actions:

- Adopt a landscape-scale approach to create robust, diverse and ecologically functional habitats, as supported by the commitments and recommendations in the Northern Ireland Biodiversity Strategy;
- Target habitat creation to buffer habitats from the negative edge effects of intensive land use, and extend the area of habitat rather than simply physically linking them;
- Reduce the release of carbon into the atmosphere by protecting carbon sinks, including particular habitats that maximise this capacity; and

• Government should maintain and further develop its procurement policies to ensure that selection of sustainable materials accounts for reduction and mitigation of climate change impacts.

6.5 Conclusions

The impacts of climate change are complex and as yet our understanding of the detail is incomplete. This must be addressed on a global, EU, UK and Northern Ireland level. In convening the November 2008 conference, we intended to formulate relevant, practical and focused recommendations that would assist government in protecting biodiversity from the most damaging elements of climate change and helping it to adapt and adjust to the inevitable changes. In doing this, government will also be supporting the ability of biodiversity to mitigate climate change impacts on our people and communities.

The challenge is enormous and urgent. We recognise the social, economic and other difficulties that it poses. Elsewhere in this report we propose a complete revision of the Northern Ireland Biodiversity Strategy. It is essential that this incorporates measures that address climate change issues. However, the climate change issue is far wider. In order to address this challenge, we recommend that government establishes a working group whose role would include developing a programme for action to address climate change issues in Northern Ireland. Part of its remit should be addressing the impacts of climate change on biodiversity in Northern Ireland's landscape (urban, rural and maritime) and enhancing the resilience of ecosystems to mitigate the impacts of climate change.

Recommendation 45 Government should establish a working group on climate change, responsible for advising on reduction of greenhouse gas emissions and on adaptation to the impacts of climate change.

Recommendation 46 A key remit of a climate change working group should be aiding biodiversity to survive and adapt to our changing climate.

Otter Mark Hamblin

Chapter 7 Is the Strategy Working?

NIBG's 2005 report asked if the strategy was working, and we return to it now. We stated that our priority was addressing issues of the delivery mechanisms, or process in implementing the Northern Ireland Biodiversity Strategy.

In 2005 we produced 74 report recommendations of measures that could be undertaken to improve this process, and stressed the urgency of these if the 2016 target of halting biodiversity loss is to be achieved. Many of these recommendations have been partly or wholly implemented, whilst others appear to have been ignored (these are reported where appropriate). In 2005 NIBG also signalled that in subsequent reports it intended to focus on the 'actual progress of biodiversity in Northern Ireland's lands and waters' i.e. real outcomes for our fauna and flora and their habitats. This report begins that approach, in the firm conviction that it is only through actual physical success of our biodiversity that any of this work and expenditure can be justified, but it also contains a further review of key delivery mechanisms.

Our report highlights a wide range of areas where work is now being undertaken to halt loss of Northern Ireland's biodiversity by 2016, and to commence recovery. Some of these measures are beginning to be effective and should achieve welcome progress towards these objectives. Other measures have been undertaken but because of a variety of problems including lack of resources, motivation, leadership and overcoming inertia, have yet to demonstrate any benefits, or likelihood of delivering benefits. There are also many areas where work has been minimal so far, or not taken place at all. Our appraisal of the actual objective of halting biodiversity loss has suggested that some progress has been made, whilst in other respects losses still continue. However our analysis of the situation has been gravely hindered both by a lack of data and by confusion between data that has been supplied to us. This must be a problem for everyone and it profoundly affects both delivery of the Strategy, and demonstrating that delivery.

Such data that is available to NIBG indicates that whilst some progress is being made in respect of safeguarding and restoring priority habitats, the situation for priority species is apparently one of continuing loss in many cases. The suite of 18 'exemplar' priority species (out of 271) for which limited data was provided suggested possible progress on just one species and decline or data deficiency in roughly equal proportions for the rest.

Throughout the report we have made recommendations that, if implemented, should strengthen progress towards the 2016 target of halting biodiversity loss. Without these it is unlikely that Northern Ireland's biodiversity loss will ever be halted. However the report also identifies a number of key over-riding and cross-cutting issues that have to be addressed. These deserve urgent and serious consideration at the very highest level.

Cross-Cutting Recommendations

The need for a complete review of the Northern Ireland Biodiversity Strategy. The present Strategy was signed off in 2002, although drafted in the late 1990s. Because it is over a decade old, it does not reflect the major concerns relating to climate change, current EU policies, rapid changes in the quality of our countryside, recent and imminent administrative changes, nor indeed the achievements that have been made. It also does not reflect today's appreciation of the close links between biodiversity and geodiversity, the increased awareness of the value of ecosystem services, nor the wide range of interdependencies within the environment. Moreover, some of the recommendations are worded so vaguely as to be unmeasurable by today's standards. A major review should be undertaken as a matter of urgency to address the new issues and refine the measures from the old Strategy that are still relevant. Whilst still adhering to the 2016 target, it should be aligned to the UK Biodiversity Strategy Review that will follow the UK's overall target date of 2010.

Other top level issues that require attention if the target is to be achieved:

A strategic review of data requirements of the NI government in complying with legislative, environmental and biodiversity responsibilities.

In the preparation of this report, and our attempt to focus on real biodiversity delivery, we were hampered by confusing data on the same subject from different sources, presentation of some data in an almost unusable form and a complete dearth of data relating to priority species - not even baseline data is available for many species. A single, authoritative and accountable source of biodiversity (and other environmental) data, drawing material from inter alia NIEA, DARD, Lough's Agency and other bodies, is an essential requirement if progress is to be demonstrated. We would also regard this as a minimum requirement in demonstrating responsible public spending (see also Section 3.9.2). It may be helpful in the future to establish and define meaningful targets in ways that can be realistically measured, particularly given the likely large number of new NI priority species following the UK Review;

Embodiment of a duty on all public bodies to further the conservation of biodiversity within the

revised Wildlife (NI) Order. This is currently under consideration in the context of an overall review. We hope that the present support for this measure will be maintained. It is essential that it is embedded in the business plans of all government and local government bodies in the fulfilment of their functions with complete engagement from senior managers. Following this it is essential that all new legislation, particularly in the context of the Review of Public Administration reflects this duty. Public bodies should not be left without support for their work in meeting this new statutory responsibility. Welcome progress has been made by DoE in delivering support to government departments in the delivery of their Biodiversity Implementation Plans – this should be continued and rolled out to the new suite of local authorities and others;

Adequate resourcing for biodiversity work, based on the requirements of a revised Strategy, undertaken by all public bodies as appropriate. NIBG considers that at present these are inadequate for the task

in hand. We recognise that this will be an unpopular recommendation in the current economic climate. However taken with the requirements under the Climate Change Bill (Section 6.3.2), to introduce measures for adaptation to climate change together

with the requirement to comply with the Water Framework, Habitats, Birds, Nitrates and other Directives, there is a real opportunity to achieve synergy of measures that would achieve better delivery for biodiversity and responsible allocation of resources. A significant step would also be ensuring the most effective use of existing resources, for example through the Rural Development Programme, EU Fisheries Fund, etc. It is essential that public bodies allocate resources to support their Biodiversity Implementation Plans, though in many cases these do not need to be significant – indeed some may offer savings;

Measures to reduce the impacts of climate change, where possible, and to assist biodiversity in adapting to those aspects of climate change that are unavoidable. Northern Ireland's people and its biodiversity cannot avoid significant climate change impacts – indeed they are already occurring. In many respects the interests of biodiversity and social and economic interests coincide. Biodiversity can also offer ways in which some effects of climate change can be mitigated. Government should establish a working group to address climate change issues in Northern Ireland as proposed in Section 6.5 (its deliberations should cross-reference to the review of the Northern Ireland Biodiversity Strategy proposed above); and

Landscape-scale measures integrating protected sites with restoration of wider habitats.

Northern Ireland's suite of protected sites, though still needing further designation and management work, can (together with agri-environment measures) protect our most specialised, vulnerable and localised species and habitats. They should be maintained and strengthened. However, the pressures of wider changes in the countryside, including climate changeinduced shifts in habitats and species mean they cannot be regarded as 'islands' of biodiversity separate from the surrounding countryside. Habitats (and therefore many species' distributions) are becoming fragmented due to urbanisation and intensive farming - reflected in data from the NI Countryside Survey. A new landscape-scale approach is needed, that integrates the needs of farming and rural communities, site protection and habitat restoration, allowing our landscape and biodiversity to adjust to the pressures of human use and the spatial shifts caused by climate change. A key element of this should be a review of the planning system in the context of the Review of Public Administration.

NIBG conclude that welcome progress has been made with the processes and mechanisms of halting biodiversity loss in Northern Ireland by 2016. Although much remains to be done, a start has been made in slowing, halting and reversing biodiversity loss. However, there is little hard evidence that the deterioration of Northern Ireland's biodiversity is actually slowing down, or that there are strong demonstrable outcomes for our biodiversity. Because of the confused information available and the lack of data for key elements of our biodiversity, it remains a challenge to know what direction the trends are actually following. Given the challenges posed by climate change and many other changes, now is the time to review the whole process, evaluate all systems, policies and legislation for compliance with the biodiversity target, and to imbue the aim of saving Northern Ireland's biodiversity with a strong culture of urgency. Government made a strong statement when signing off the Northern Ireland Biodiversity Strategy, and it should act now on those sentiments:

"The environmental challenge which faces Northern Ireland cannot be overstated. But it is matched by our determination to arrest and reverse the decline."

Northern Ireland Minister for the Environment, 2002

Appendix

Abbreviation	Definition	Abbreviation	Definition
AES	Agri-Environment Scheme	CNCC	Council for Nature Conservation and the Countryside
ANIFPO	Anglo North-Irish Fish Producers' Organisation	CSR	Corporate Social Responsibility
ASSI	Area of Special Scientific Interest	CVNI	Conservation Volunteers Northern Ireland
BAP	Biodiversity Action Plan		
BARS	Biodiversity Action Reporting Scheme	CZM	Integrated Coastal Zone Management
BBS	Breeding Bird Survey	DACMS	Department of Arts, Culture, Media and Sport (in GB)
Biodiversity Partnership	UK initiative co-ordinating delivery of UK Biodiversity Strategy	DARD	Department of Agriculture and Rural Development
BIP	Biodiversity Implementation Plan	DCAL	Department of Culture, Arts and Leisure
BDU	Biodiversity Unit, established in EHS (now NIEA) for delivery of its responsibilities	DEFRA	Department of Environment, Food & Rural Affairs (in GB)
BRIG	Biodiversity Reporting and Information Group	DEHLG	Department of Environment, Heritage and Local Government (in Rol)
BRAG	Biodiversity Research and Advisory Group	DEL	Department for Education and Learning
BTO	British Trust for Ornithology	DETI	Department of Enterprise, Trade and Investment
CBC	Common Birds Consensus	DFP	Department of Finance and
CBD	Convention on Biological Diversity		Personnel
CCEA	Council for Curriculum, Examinations and Assessment	DHSSPS	Department of Health, Social Services and Public Safety
CEDaR	Centre for Environmental Data	DoE (NI)	Department of Environment (in NI)
СМВ	and Recording Countryside Management Branch	DRD	Department for Regional Development

Abbreviation	Definition	Abbreviation	Definition
EIA	Environmental Impact Assessment	LFACA	Less Favoured Area Compensatory Allowances
EEF	Environmental Education Forum	MCA	Maritime and Coastguard Agency
EMS	Environmental Management System	MCZ	Marine Conservation Zones
ESA	Environmentally Sensitive Area	ММО	Marine Management Organisation
ESD	Education for Sustainable Development	MOSS	Management of Sensitive Sites (scheme)
FD	Fisheries Division	NGO	Non-Governmental Organisation
FS	Forest Service	NIAPA	NI Agricultural Producers' Association
GM	Genetically Modified		Association
Habitas	Museums' initiative on biological & geological material and its interpretation	NIBG	Northern Ireland Biodiversity Group
	interpretation	NIBS	Northern Ireland Biodiversity
HAP	Habitat Action Plan		Strategy
HBC	Historic Buildings Council	NICMS	Northern Ireland Countryside Management Scheme
HMC	Historic Monuments Council	NIEA	Northern Ireland Environment
HLF	Heritage Lottery Fund		Agency (formerly Environment and Heritage Service)
ISCOPE	Irish Scheme for Cetacean Observation and Public Education	NIEL	Northern Ireland Environment Link
IWDG	Irish Whale and Dolphin Group	NILGA	Northern Ireland Local Government Association
JNCC	Joint Nature Conservation Committee (UK-wide)	NPWS	National Parks and Wildlife Service
LA	Local Authority	NT	National Trust
LBAP	Local Biodiversity Action Plan	OFMdFM	Office of First Minister and deputy First Minister

Abbreviation	Definition	Abbreviation	Definition
PEPG	Planning and Environmental Policy Group (of DoE NI)	SFP	Single Farm Payment
PPS	Planning Policy Statement	SIA	Sustainability Impact Assessment
PSG	Permanent Secretaries' Group	SLNCI	Site of Local Nature Conservation Importance
QPANI	Quarry Products Association Northern Ireland	SMART	Specific Measurable Achievable Relevant Time-Related
Ramsar	Protects wetlands of international importance	SME	Small to Medium-Sized Enterprises
RBMP REPS	River Basin Management Plan Rural Environmental Protection Scheme	SoE	State of the Environment report
		SPA	Special Protection Areas
RPA	Review of Public Administration	ТРО	Tree Protection Order
RSPB	Royal Society for the Protection of Birds	UKWAS	UK Woodland Assurance Standard
SAC	Special Areas of Conservation	UWT	Ulster Wildlife Trust
SAP	Species Action Plan	WeBS	Wetland Bird Survey
SEA	Strategic Environmental Assessment	WFD	Water Framework Directive

Membership of Northern Ireland Biodiversity Group 2008 & 2009

Chairman

Bob Brown

Agriculture

lan Simpson (UFU) Sean Murray (NIAPA) Michael Harnett (UFU)

Business

Laverne Bell (QPANI, replaced Gordon Best) Andy Bate (Translink) Chris Lundy (Belfast City Airport) *resigned position 12/11/08 Richard Robinson (McLaughlin & Harvey) David Knott (Belfast Harbour Commissioners)

Environmental NGOs

Heather Thompson (UWT) James Robinson (RSPB) Phil Davidson (National Trust)

Aquaculture

Joanne Gaffney (Aquaculture Initiative)

CNCC

Pat Cregg (Woodland Trust) replaced by Peter Archdale 16/01/09

NILGA

Cllr Stephen Huggett (Fermanagh District Council) Rosemary Mulholland (Craigavon Borough Council)

Estate Management

John Witchell (Royal Institute of Chartered Surveyors)

Education

Bernard Smith (Geodiversity - Queens University Belfast) Andy Griggs (Environmental Education Forum) joined Sept 08

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